GOVERNMENT OF INDIA
TARIFF COMMISSION

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REPORT
ON THE
FAIR SELLING PRICES
OF
AUTOMOBILE ANCILLARIES

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BOMBAY, 1968

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India, Tariff (Commission)
Report on the Fair Selling
Prices of Automobile An-
cillaries, 1968

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GOVERNMENT OF INDIA
(BHARAT SARKAR)

MINISTRY OF INDUSTRIAL DEVELOPMENT
(Audyogik Vikas Mantralaya)

Department of Industrial Development
(Audyogik Vikas Vibhag)

New Delhi, the 12*th Vaisakha,* 1894.
2*nd May,* 1972.

RESOLUTION

No. 1(53)/68-A.E.Ind.(I).—The Tariff Commission submitted its Report is July, 1968, on the Fair Selling Prices of Automobile Ancillaries on the basis of an inquiry undertaken by the Commission under Section 12(d) of the Tariff Commission Act, 1951 (50 of 1951). Its recommendations are stated below:—

(i) The study of costs of various units manufacturing automobile ancillaries has shown that in most of the units the prices calculated based on optimum capacity level are comparable to those ruling at present and only in a few cases there occurs a slightly higher margin.

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(ii) The D.G.T.D. should collect data on the automobile ancillary industry as comprehensively as possible so that the real progress achieved by the industry could be measured. It is equally important that the All India Automobile and Ancillary Industries Association and ancillary manufacturers should cooperate with the D.G.T.D. by furnishing requisite information. It is necessary that upto date statistical information for such organised industry should be available for future planning as well as for monitoring the progress of the industry.

(iii) The All India Automobile & Ancillary Industries Association has done good work in bringing out a yearly brochure of statistics of production of ancillary items in money value for the year 1961 to 1966. It is desirable that quantitative statistics should also be collected and published as this would give a more accurate picture of the progress of the industry in as much as the figures in terms of value alone are likely to give a distorted picture

(iv) Now that the ancillary industry has developed, it is advisable that the automobile manufacturers should confine themselves, to the production of essential items only. The ancillary industry should also try to attract the vehicle manufacurers by offering components at lower prices, with assured delivery schedules.

(v) It is desirable that the vehicle manufacturers and ancillary manufacturers should work in close cooperation and that there should be close liaison between them. Automobile manufacturers should give ancillary producers all the technical assistance when needed. In the interest of both the industries, the relationship between them should be harmonius.

(vi) Considering the export potential of the automobile ancillary industry, the Tariff Commission is of the opinion that as and when collaboration agreements come up for renewal, there should be some compulsion to remove restrictive clauses which hinder exports from India.

(vii) Full data of the small scale units particularly regarding capacity should be maintained by the State Governments.

(viii) The raw material requirements of the small scale sector should be properly assessed and arrangements made for their steady supply to this sector.

(ix) Action should be initiated to assess the range and size of production of different ancillary items existing in the small scale sector.

(x) No further expansion of the existing capacity to manufacture ancillary items by the vehicle manufacturers should be permitted and no licences for any replacement of the machinery for the same should be issued wherever the ancillary industry can supply these items to them.

(xi) It is desirable that the producers of such of those automobile ancillaries for which raw materials are to be imported should go in for bulk purchases for their own benefit as well as that of the country.

(xii) There should be active co-operation between automobile ancillary industry and the machine tool industry so that most of the requirements of machine tools can be made available indigenously.

(xiii) Although it is the responsibility of the automobile manufacturers to ensure that the parts used meet their specifications, it does not absolve the ancillary manufacurers of their responsibility in ensuring a uniform and acceptable standard of quality.

(xiv) As every small unit cannot afford to have all the necessary costly equipment to test quality the All India Automobile and Ancillary Industries Association should take necessary measures to help such units.

(xv) It is desirable that all the automobile ancillary units should introduce quality control.

(xvi) The Sectional Committee of the Indian Standards Institution dealing with automobile vehicles may look into the question of standardising some non-functional parts of automobiles also.

(xvii) As research cannot be undertaken by the small scale units, the All India Automobile Ancillary Industries Association should take the initiative in this respect.

(xviii) For a fuller utilisation of facilities at the Central Engineering Research Institute, Durgapur, the National Test House, Alipore, etc. greater coordination should be established between them and the automobile ancillary manufacturers.

(xix) Product design and engineering which is most essential for the growth of the ancillary industry has been largely negected in the past. This requires to be developed adequately as early as possible.

(xx) The ancillary manufacturers should explore the possibility of making the network of distribution and service facilities more efficient and ensure regular flow of parts to the replacement market.

(xxi) It would be desirable if the ancillary manufacturers print warranty on every package as such action would create confidence in the consumer regarding the genuineness of the product.

(xxii) In a few cases the difference between the prices charged by automobile manufacturers and/or their dealers and those charged by the ancillary manufacturers for the same items is quite high.

(xxiii) Automobile manufacturers should reduce the price for the spare parts sold by them to the same level as those charged by the ancillary manufacturers.

(xxiv) The Government should ensure that restricted imports are confined to older models now operating on the Indian roads as far as possible, since the ancillary industry is now well established.

(xxv) The measures suggested by the All India Automobile and Ancillary Industries' Association for achieving an export target of Rs. 10 crores by 1970-71 may be considered sympathetically, as exports apart from earning valuable foreign exchange would also result in larger scale of production yielding economies of scale and thereby reducing prices of ancillaries.

(xxvi) On the question of export promotion it is hoped that there will be frequent discussion between the representatives of automobile ancillary industry and Government so that the difficulties in the way of export could be sorted out quickly in the interest of the country and the industry.

2. In May, 1966, the Tariff Commission had been requested to undertake the enquiry into the production cost of automobiles and to furnish its recommendations/Report about the fair selling prices of the different types of automobiles at present under production in the country. The Commission had also been requested that simultaneously with an enquiry into the selling prices of the main automobile manufacturers, it should also undertake an enquiry into the cost structure of some of the major ancillary industries. The Commission submitted two reports, one on the fixation of Fair Selling prices of Automobiles and the other on the Fair Selling Prices of Automobile Ancillaries. Government's Resolution on the Report of the Tariff Commission on the fixation of Fair Selling Prices of Automobiles was issued on the 4th October, 1969. Based on the recommendations of the Commission the selling prices of the three makes of passenger cars manufactured in the country were notified on the 21st September, 1969 under Section 18(G) of the Industries (Development and Regulation) Act, 1951.

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The prices so fixed by Government were, however, challenged by the car manufacturers in Writ Petitions in the Supreme Court, who after hearing the concerned parties recommended the setting up of an independent Commission namely, the Car Prices Inquiry Commission for recommending the fair selling prices of the three makes of cars manufactured in the country, and submit their report for the consideration of the court. The report of the Car Prices Inquiry Commission which was submitted in March, 1971, was considered by the Supreme Court and the Court, after hearing the concerned parties, delivered its judgement on the 24th November, 1971 laying down the principles on which the future selling price of the three makes of passenger cars should be worked out and notified by Government. Accordingly, the selling prices of the three makes of cars were re-worked on basis of the principles laid down by the Commission and the revised selling prices have been notified on 24th January, 1972.

3. The intention of Government in requesting the Tariff Commission to investigate into the cost of production of some of the ancillary industries was mainly to ascertian whether there was any substance in the complaints made by the automobile manufacturers that the prices charged by the ancillary manufacturers for original Equipment manufacturers were exorbitant. On this basic point, the Commission's conclusion is that, with a few exception, the O.E. prices charged by the automobile ancillary manufacturers cannot be considered unreasonable. In view of this and the fact that the various recommendations made by the Commission in the present Report had been taken into account by Government in examining the Commission's Report on the Fixation of Fair Selling Prices of Automobiles, and in the light of the subsequent developments leading to the refixation of the selling prices of passenger cars in accordance with the principles laid down in the judgement of the Supreme Court, Government have decided not to take any further action on the various recommendations made by the Tariff Commission in its Report on the Fair Selling Prices of Automobile Ancillaries at this stage.

ORDER

Ordered that a copy of the Resolution be published in the Gazette of India and a copy thereof communicated to all concerned.

(No 1(53)/68-A.E.Ind.(I))
Sd/- (S. M. GHOSH)
Jt. Secretary to the Government of India.

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CHAPTER I

INTRODUCTORY

1 Reference to Commission

1.1. Since protection granted to the automobile industry was due to expire by the end of December, 1967, we undertook a *suo motu* inquiry under Section 11(e) read with Section 13 of the Tariff Commission Act, 1951. While we were about to initiate action on the case, we received a communication from the Government of India on 31st May 1966 asking us to undertake an inquiry under Section 12(d) of the Tariff Commission Act, into the cost structure and fair selling prices of automobiles and to furnish our recommendations/Report to Government about the fair selling prices of the different types of automobiles at present in production in the country. In the same communication Government requested the Commission to inquire into and to furnish its recommendations/Report to Government on the fair selling prices of ancillary industries.

1.2. While remitting the case of automobile ancillary industries to the Commission Government explained the circumstances under which they decided to refer the case for inquiry and report. Government have stated that they had been receiving complaints that while informal price control was exercised over the prices of assembled automobiles no such control was being exercised in the case of automobile ancillary industries. There were certain complaints also that the prices charged by the ancillary producers for original equipment manufactures were exorbitant. To ascertain the correct position the Cost Accounts Branch of the Ministry of Finance examined the cost of production of some of the important ancillary manufacturing units. The cost reports indicated that the selling prices of some of the units had been on the high side but since this required more systematic and comprehensive study, Government considered it desirable that simultaneously with an inquiry into the selling prices of

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the main automobile manufacturers the Commission should undertake an inquiry into the cost structure of some of the major ancillary industries also with a view to determining their fair selling prices. We have, therefore, undertaken this inquiry under Section 12(d) of the Tariff Commission Act, 1951 along with our inquiry into continuance of protection to the Automobile industry and prices for Automobiles.

1.3. The letter of reference to us is reproduced in Appendix-I. We have already submitted our Report on the continuance of protection to automobiles and our Report on fair selling prices of different types of automobiles manufactured in the country is being submitted separately. In the present Report, we deal with the fair selling prices of automobile ancillary industries.

2 Scope of inquiry

2.1. It will be seen from the Government's reference (Appendix-I) that we have been asked to (i) examine the cost structure of some of the major ancillary industries, and (ii) determine fair selling prices for the same.

2.2. The scope of our inquiry covers ancillaries which go into the manufacture of different types of automobiles the fair selling prices for which we have arrived at in the Report which we are submitting separately. However, the Ministry of Industrial Development and Company Affairs [in its letter No. 1(105)/66-A.E. Ind. dated 7th February, 1967] clarified that the scope of the inquiry could include batteries, which are considered an important ancillary to the automobile industry, but tyres and tubes may be excluded as this industry is not treated as an automobile ancillary industry.

2.3. Our terms of reference suggest that we should examine the cost structure of the major ancillary industries. Government, however, while remitting the case, left the selecting of ancillary items for cost investigation to the discretion of the Commission with a stipulation that the selected items should contribute substantially to the economics of production of vehicles by the main manufacturers. Accordingly, we decided to study the cost of production of the following ancillaries manufactured by 18 companies:

Group	Item
Engine	1. Oil pump 2. Semi-finished castings
Clutch	3. Clutch assembly
Cooling . . .	4. Radiators block assembly
Fuel	5. Multi-cylinder pumps and nozzles
Electrical items . .	6. Dynamo, starter motor, headlamp wiper motor, alternator etc.
Propeller shaft . .	7. Propeller shaft
Brakes	8. Brake assembly 9. Servo-equipment, air-brakes and compressors.
Wheels . . .	10. Road wheel assembly
Body	11. Automobile safety glass
Instrumentation . .	12. Panel instruments.

3 Method of Inquiry

3.1. As a first step, a list of units engaged in the manufacture of automobile ancillaries was obtained from the Director General of Technical Development (here-in-after referred to as the D.G.T.D.) Similar information about small scale units was obtained from the Development Commissioner, Small Scale Industries (D.C.S.S.I.) and also from the Federation of Association of Small Industries in India. A detailed questionnaire was issued to large scale producers and a short one to small scale producers in September 1966. A brief questionnaire for prospective producers was issued separately. The Planning Commission was requested to furnish general information about the progress of the automobile ancillary industries during the Plan periods. The D.G.T.D. and the D.C.S.S.I. were asked to send comprehensive memoranda covering the various aspects of the ancillary industries in their respective sectors. Information about the industrial licensing policy was obtained from the Ministry of Industry and Supply (now the Ministry of Industrial Development and Company Affairs). Information was called for from the Collectors of Customs and the Chief Controller of Imports and Exports regarding c.i.f. prices and import control policy respectively. The Indian Standards Institution was approached for information regarding Indian Standard Specifications for various ancillary items. Our High Commissions/Embassies in U.K., U.S.A., West Germany, Italy, Switzerland and France were approached for information regarding f.o.b./c.i.f. prices for some ancillary items for which costing was undertaken by the Commission in connection with our inquiry. Research institutions like the Central Mechanical Engineering Research Institute and National Metallurgical Laboratory etc. were also addressed regarding the facilities available with them for testing indigenous products. Information about export possibilities and assistance available for export promotion was sought for from the Engineering Export Promotion Council. The Chief Secretaries and Directors of Industries of various State Governments were also requested to furnish memoranda to the Commission on the problems faced by the automobile and automobile ancillary industries in their respective States. The Federation of Associations of Small Industries of India was requested to express its views on behalf of the small scale producers. The All-India Automobile and Ancillary Industries' Association (here-in-after referred to as the A.I.A.A.I.A.) was invited to apprise the Commission of its views on the various problems faced by the automobile ancillary industries. Press Notes were issued in September 1966 and in February 1967 regarding the current inquiry undertaken by the Commission, inviting all those interested to obtain copies of the relevant questionnaire and send their replies to the Commission. A list of firms and bodies who replied to the questionnaires and letters is given in Appendix II.

3.2. In order to obtain a first hand knowledge of the problems of the industry we visited some units manufacturing automobile ancillary items, details of which are given in Appendix III.

3.3. The list of companies selected for costing, the names of the items costed and the names of the Cost Accounts Officers who undertook the cost investigation of the companies are given in Appendix IV.

3.4. We held a public inquiry into the Fair Selling Prices for Automobiles Ancillaries on 7th November 1967. The names of the parties who attended the public inquiry are given in Appendix V. The public inquiry was followed by discussions on cost of production with the 18 companies during the period 8th to 18th November, 1967.

4 Commission's previous inquiries on some selected ancillary industries

4.1. The Commission had in the past taken up certain specific ancillaries for inquiry under the Tariff Commission Act, 1951 mainly with a view to examining their case for grant of protection. These inquiries were undertaken by the Commission closely following its Report on the automobile industry submitted to Government in 1953. It may be stated that in its Resolution dated 27th May, 1952 the then Ministry of Commerce and Industry had requested the Commission to make a thorough technical and such other examination as it might consider proper and to recommend measures necessary to protect, assist and facilitate the speedy growth of the automobile industry in India. Among the six specific terms of reference those having a bearing on the ancillary industries were the following:

"(a) To examine the manufacturing programmes (present and proposed) of Hindustan Motors and Premier Automobiles as well as of the industries engaged in the production of essential components for these units and report whether they are technically sound and their implementation would result in the manufacture of vehicles at a price which would permit of an expanding demand and if so, by what date;

"(b) To examine and report on the steps necessary to encourage the growth of ancillary industries.

"(c) To examine and report on the arrangements for the import of vehicles, accessories and raw materials necessary to meet the requirements of the industry and the public.

"(d) To examine and report whether any change in the existing rates of imports duty on components of motor vehicles is required and if so, in what respect; or whether the grant of subsidy would be suitable and, if so, what conditions should be attached to it; or whether a combination of both these methods should be adopted."

4.2. In its 1953 report on the automobile industry the Commission had stated that various ancillary industries which had furnished information claimed protection or assistance in various forms such as abolition, reduction or refund of import duty on raw materials used by them, maintenance or increase of import duty on corresponding foreign products and imposition of import restriction or complete import ban. Some units had also complained about prejudice against their products. Moreover, as it was difficult to arrive at a general conclusion in regard to all the ancillary industries which differed considerably in their techniques, equipment and stage of development generally, the Commission decided that the case of each industry would have to be examined separately before any conclusion was reached or recommendation made about the eligibility of the industry for protection, quantum of protection required and the nature of protection or assistance to be given. The Commission had however, carried out cost investigations into certain ancillary industries while examining the case of the automobile industry and recommended that ancillary industries requiring protection or assistance should be asked to apply for it according to the usual procedure. Subsequetly, the Commission in its letter No. TC/ID/E/88 Comp. dated 6th August, 1953 to the then Ministry of Commerce and Industry stated that it proposed to complete its examination of the cases of those ancillary industries in respect of which cost investigation had already been carried out and to report on their claims for grant of protection and/or assistance and that the cases of other ancillary industries would be taken up in due course.

4.3. In the meanwhile representations were received from certain manufacturers of ancillaries e.g. Metropolitan

Springs Ltd., Bombay and Canara Workshops, Mangalore (leaf springs) and Motor Industries Company Ltd., (Spark plugs and diesel fuel injection equipment) seeking protection. Protection to motor vehicle battery industry had been recommended by the Tariff Board since 1949 on the basis of an initial application by Standard Batteries in 1946. A number of automobile ancillary industries gradually came under tariff protection but were subseqently deprotected. There is one item at present viz., multi-cylinder pumps which is enjoying protection. The table below indicates the ancillaries which were granted tariff protection by the Commission, as the result of specific inquiries together with the year of initial grant of protection and the year of de-protection.

TABLE I

Names of automobile ancillary industries which enjoyed tariff protection

Sl. No.	Name of the ancillary industry	Year of initial grant of protection	year of de-profection
1	*Motor Vehicle Batteries*	*1948*	1956
2	*Automobile Leaf Springs*	*1954*	1960
3	*Automobile Hand Tyre Inflators*	*1955*	1961
4	*Automobile Sparking Plugs*	*1955*	1966
5	*Piston Assembly*	*1955*	1967
6	*Diesel Fuel Injection Equipement*	*1955*	1964

4.4. Regarding multi-cylinder pumps, we had recommened protection in 1964 upto the end of 1967 and observed that its claim for continuance of protection should be examined along with that of automobile industry. We have since requested Government to extend the period of protection upto 31st December, 1968. [It may be added that the entire range of automobile ancillaries, with the exception of the specifically deprotected items, enjoys tariff protection under I.C.T. item Nos. 75(9), 75(10), 75(11), 75(12) and 75(14) at present.]

CHAPTER II

GROWTH OF AUTOMOBILE ANCILLARY INDUSTRY AND ITS PRESENT POSITION

5.1. Prior to First Five Year Plan period.

5 Growth of automobile ancillary industry in India

5.1.1. The establishment of the automobile ancillary industries in India may be said to be a direct consequence of the establishment of automobile manufacturing units as distinct from units engaged in assembling operations. We have discussed in detail the progress of automobile industry since 1956 in our report on continuance of protection to the automobile industry which we have submitted to Government recently. As the automobile industry in our coutry was itself an assembling industry, the question of the development of the ancillary industry did not arise.

5.1.2. The growth of automobile ancillary industry should be studied along with that of the automobile industry in India. The importance of establishing an automobile industry was recognised by the Government of India in 1945 when a Panel on Automobiles and Tractors was constituted to make recommendations on the development of manufacture of automobiles and tractors in India. In their Report submitted in 1947 the Panel recommended (i) the grant of local facilities in the matter of land acquisition, power and water, etc., to national concerns undertaking manufacture of automobiles in India, (ii) free exchange facilities for the importation of efficient and up-to-date machinery by such concerns, (iii) duty-free import of raw materials, certain forgings, castings, etc., machinery and capital equipment by the concerns, (iv) adoption of the principle of a graduated differential in customs duties levied on various individual components the differential to depend on the time required to establish manufacture in India, and (v) other measures of assistance such as grant of bounties and subsidies. In the Statement of Industrial Policy made in Parliament on 6th April, 1948, automobiles and tractors were classified among those industries of importance which would be subject to regulation and control by the Central Government. In 1949, Government decided that import of motor vehicles should be allowed only in c.k.d. (completely knocked down) condition, though in a few special cases built-up vehicles were also allowed and in the case of one assembler permission was given to import vehicles in s.k.d. (semi knocked down) condition for one more year. From 1st April, 1950, customs duty on certain parts which were being manufactured in the country and which were likely to be manufactured in the course of the next two years was raised, pending an inquiry into the question of grant of protection and assistance to the industry.

5.1.3. In March 1950 the components and parts of motor vehicles were classified for tariff purposes into three categories. The first category consisted of components and parts which were being manufactured in India, while the second category consisted of components and parts likely to be manufactured in the next two years. The third category included components and parts other than those included in the first and second categories. The standard rates of duty were 60 per cent, 90 per cent and 30 per cent *ad valorem* on components and parts in the first, second and third categories respectively. The distinction between motor cars and commercial vehicles in the matter of assessment of their components and accessories to duty was abolished. This obviated the possibility of certain car components being imported as truck components at a lower rate of duty. In pursuance of an assurance given by Government in the course of the debate in Parliament on the revision of import duties, an Automobile Expert Committee went into the question of duties in respect of different categories in 1950. The Committee which was headed by Shri T. Sivasankar I.C.S. categorised the components into three groups viz.

(i) List of items then manufactured in India (Rubber, mountings, carpets etc.)

(ii) List of components likely to be manufactured in India in the next two years. (Crank shafts, horns, king pins, seat runners, bumpers, etc.).

(iii) List of components not likely to be manufactured in the next two years (Thin walled bearings, distributors, steering mechanism, roller bearings etc.)

Complete details of the above are given in Appendix VI. The revised classification of components and parts for purposes of duty as recommended by the Committee was accepted by Government in March 1951. A surcharge of 5 per cent was levied on all rates of duty with effect from 1st March. 1951. The margin of preference in respect of imports from U.K. was reduced from 6 per cent to 3 per cent *ad valorem* in accordance with negotiations under the General Agreement on Tariffs and Trade. The reduced margin applied only to articles adapted for use as parts and accessories of motor cars including taxi cabs. For articles not so adapted, a margin of 7½ per cent *ad valorem* was maintained.

5.1.4. During the First Plan, immediately after its inquiry into the automobile industry, (as already indicated in an earlier paragraph) the Commission had examined and granted protection to some automobile ancillaries. This was followed by import restrictions. The significant growth in vehicle population coupled with the inability of automobile manufacturers to cater to the replacement needs paved the way for the development of ancillary industry. In the following paragraphs, a brief account of the growth of automobile ancillary industry in India is given.

5.2. Progress during the First Five Year Plan period.

5.2.1. At the beginning of the First Plan period there were 12 firms in the country all of which started with assembling programme for automobiles while five of them had plans to undertake the manufacture of components and finally the complete vehicles. One of the main problems facing the automobile industry at that time was the absence of an ancillary industry. Hindustan Motors and Premier Automobiles had right from their inception certain plans for increasing both the volume and range of the manufacture of components required by them for the assembly of automobiles. Hindustan Motors started erecting foundry and forge plant to manufacture parts used in the cars assembled at its works, Premier Automobiles was manufacturing radiators, mufflers, propeller shafts, springs and shock-absorbers and had plans for the production of transmission and differential and later the production of engines.

5.2.2. Thus, at the beginning of the First Plan period only a nucleus of the ancillary industry existed in the country. The Commission recommended in 1953 that for healthy and balanced development of the automobile industry, ancillary industries should be developed for the manufacture of important components such as carburettors, fuel pumps, fuel filters, air cleaners, clutches etc., in technical collaboration with the foreign firms and that the number of units to be set up and the total capacity of each main component should be correlated with the potential demand. It was also suggested that automobile manufacturers should purchase the products of ancillary industries in India for use as original equipment.

5.2.3. During the years 1954 and 1955 the manufacturing programmes of a number of new ancillary units were approved for the manufacture of a variety of components. At that time 20 important units were licensed and of them 10 were already in production. Most of the remaining units were expected to commence production during the initial stage of the Second Plan period. These firms secured technical collaboration with reputed firms in U.K., Germany and Sweden. Ancillary industries making pistons, piston rings, cylinder liners (wet and dry), gudgeon pins, tyre inflators, fuel injection pumps, nozzle holders, spark plugs, screw jacks, automotive diesel engines, valves, shock-absorbers and radiators made appreciable progress during the period 1951 to 1955. The production of these items during the same period in terms of numbers is shown in table 2. For major electrical accessories such as dynamos, starter motors and instruments, schemes were under active consideration during the First Plan period. The units which were granted licences for production of valves, gaskets and oil seals, brake lining and clutch facing, clutch and hydraulic brakes, automobile shock absorbers, electric horns did not commence production during the First Plan period.

TABLE 2

Production of important components during 1951 *to* 1955

(In Numbers)

Items manufactured :	1951	1952	1953	1954	1955	Remarks
1	2	3	4	5	6	7
1. Pistons	..	746	65,497	114,223	132,042	Production of pistons commenced only in November, 1952.
2. Piston rings . . .	1,95,085	1,425,519	1,376,399	1,575,668	1,917,762	
3. Cylinder liners (wet and dry) .	..	..	17,318	33,856	65,177	
4. Gudgeon pins . . .	..	..	..	22,790	133,326	Gudgeon pin production commenced in October, 1954.
5. Tyre inflators . . .	..	9,814	36,814	12,573	16,554	
6. Fuel injection pumps . .	..	..	..	3,938	11,813	Production of fuel injection pumps and fuel injection nozzle holders commenced in June, 1954.
7. Fuel injection nozzle holders .	..	..	..	3,813	14,524	
8. Spark plugs . . .	..	..	24,108	112,863	531,884	
9. Screw jacks . . .	..	..	..	4,984	5,909	
10. Automotive diesel engines .	..	..	..	..	3,875	

11. Valves	..	..	..	..	.. Figures are not available as these items are made by the parent firms to meet their own requirements.
12. Shock absorbers	..	..	..	..	..
13. Radiators	..	..	..	..	..

Source : Programmes of Industrial Development, Planning Commission (1956—61) P. 73/74.

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5.2.4. Details about the ten firms which were in production at the end of the First Plan and ten other firms which were expected to commence regular production in the initial years of the Second Plan, are given in table 3.

TABLE 3

Important automobile ancillary manufacturing units in India at the end of First Plan

Name of units	Items manufactured, or proposed to be manufactured
(a) Units in production	
1. India Pistons, Madras	Pistons, Piston rings, Cylinder liners(Wet & dry)and Gudgeon Pins.
2. Union Co. Accessories, Madras	Tyre inflators, Electric horns, Ignition coils and Condensors.
3. Motor Industries, Bangalore.	Fuel injection pumps, Nozzle Holders and Spark plugs.
4. Auto Accessories (India) Bombay.	Spark plugs.
5. Kirloskar Oil Engines, Poona	Thinwall/shell bearings.
6. H. J. Leach & Co., Bombay .	Filter elements for air, oil and fuel filters.
7. Malleable Iron & Tool Co., Bombay.	Chassis components.
8. Metropolitan Springs, Bombay	Leaf springs.
9. Canara Workshops, Mangalore	Leaf springs.
10. Simpson & Co., Madras .	Automotive diesel engines.
(b) New units licensed	
1. Escorts (Agents), New Delhi .	Piston rings and Cylinder liners (Wet & dry) Gaskets & Oil seals.
2. New International Motors, Ahmedabad.	Valves & Gaskets.
3. Asbestos Magnesia and Friction Materials, Bombay.	Brake linings & Clutch Discs.

TABLE 3—(*Contd.*)

1	2
4. India Radiators, Bangalore	Radiators.
5. Hydraulics, Madras	Shock absorbers
6. Fuel Injections, Bombay	Fuel injection pumps & Nozzle holders.
7. Automobile Products of India, Bombay	Clutch and hydraulic assemblies Brake & Clutch linings, Automobile diesel engines.
8 Rubber Industries, Bombay	Vulcanised rubber and insulated flexible cord.
9. Engine Valves, Madras	Valves & Tappets.
10. Acme Manufacturing Co., Bombay.	Valves.

5.3. Progress during the Second Five Year Plan period.

5.3.1. Towards the close of the First Plan period and at the beginning of the Second Plan, the Commission examined the question of protection and fair ex-works prices of automobiles. Ancillary industry was not covered at that inquiry. But between 1953 and 1956 the Commission undertook inquiries into five items of automobile ancillary industries covered by I.C.T. item Nos. 75(12A), 75(15), 75(16), 75(17) and 75(18). Further, in its Report submitted in 1956 the Commission recommended protection to automobiles and also various components covered under I.C.T. item Nos. 75(10), 75(11), 75(12) and 75(14) initially for a period of ten years. During the Second Plan the ancillary industry made valuable contribution to the automobile industry as a result of substantial progress in establishing production of a number of new items. Various components which were imported earlier became available indigenously. In respect of certain components such as leaf springs, brake linings, pistons, fuel injection equipment, though the production had commenced, it was not adequate. Production programmes for a number of additional components were approved and they were likely to bear fruit by 1962-63. Some important items in this category were starter motors, dynamos, wheels and rims and brake systems. It was expected that with the production of these items most of the components necessary for fitment as original equipment as well as spares would be available.

5.3.2. The progress of ancillary production can be seen from the fact that the annual production in value which was less than Rs. 50 lakhs at the beginning of the First Five Year Plan increased to about Rs. 9 crores in 1960.

5.3.2. The progress of ancillary production can be seen during the Second Plan period is given in the following table.

TABLE 4

Production of important components during the Second Plan period

(In Nos.)

Item Manufactured	1956	1957	1958	1959	1960
Pistons .	132,042	192,216	203,356	263,213	294,968
Piston Rings .	1,917,762	2,162,484	2,381,316	5,199,708	5,979,197
Cylinder Liners	65,177	75,775	83,327	109,535	100,768
Gungeon Pins	133,326	159,312	173,924	240,422	257,305
Fuel Injection Equipments					
(i) Elements	..	50,169	168,073	128,134	291,312
(ii) Delivery valves.	..	78,061	134,657	108,660	289,361
(iii) Injection Pumps.	..	20,934	36,324	60,297	89,800
(iv) Nozzles .	..	40,643	133,692	110,765	389,543
Spark Plugs .	531,884	369,401	736,251	885,503	1,107,789
Valves . .	..	38,484	56,459	290,743	514,568
Shock Absorbers	..	8,185	13,093	22,773	62,409
Radiators .	..	14,419	12,444	23,071	34,765

TABLE 4—(*Contd.*)

1	2	3	4	5	6
Brake Assemblies:					
(i) Hose Assemblies.	..	..	39,523	32,827	230,179
(ii) Master Cylinder Kits	..	..	21,568	69,420	
(iii) Wheel Cylinder Kits.	..	..	29,587	63,981	
Brake Linings (Ft.)	..	451,387	664,965	1,023,017	309,961
Clutch Assemblies:					
(i) Cover Assemblies.	..	..	254	2,013	58,648
(ii) Driven Plate Assemblies.	..	..	8,521	26,833	
Gaskets	..	112,065	3,215,128	6,091,598	9,899,763
Clutch Facings	..	43,910	63,197	143,838	179,878
Automotive Diesel Engines.	..	3,333	4,255	8,707	10,065

Source: Programmes of Industrial Development, Planning Commission (1961—66) page 184.

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5.3.4. The *Ad-Hoc* Committee on Automobile industry (Jha Committee) in its Report (1960) classified the ancillary industry into three broad categories as follows:

(a) Items whose import is not necessary (items like paints, upholstary materials, bodies).

(b) Components whose production has started but complete self-sufficiency has not yet been achieved (items like leaf springs, shock absorbers, fuel injection equipment, inlet and exhaust valves).

(c) Components for whose production schemes have been approved or are under consideration and whose production is likely to be established by 1961 (items like starter motors and other electrical items, propellor shafts and universal joints, wheels).

Full details of the above are given in Appendix VII. It was pointed out to the committee that the price at which components from the ancillary industry were obtained was often higher than that of the imported components. The Committee suggested that it was necessary to impose a stricter discipline both on the ancillary producers and on the main producers in order to bring down the cost of production of vehicles. An important suggestion made by the Committee was that it would be desirable that some of the major items not generally considered as the responsibility of the ancillary industry are developed by the automobile manufacturers themselves on a co-operative basis.

5.3.5. For the development of the ancillary industry in the small scale sector, Government set up a special division not only for the automobile industry but other industries as well under the Development Commissioner, Small Scale Industries.

5.4. Progress during the Third Five Year Plan period:

5.4.1. Regarding the programme of development for ancillary industry during the Third Plan period, the Planning Commission observed: "It is estimated by the Development Council for Automobiles and Automobile Ancillary Industries and Transport Vehicle Industries that the demand for production of ancillaries will be of the order of Rs. 25 crores by 1965-66. It is envisaged that the capacity and production of the indigenous industry will be of the same order by the end of the Third Plan."

5.4.2. In 1963 a delegation consisting of various representatives of the industry, and Government visited U.S.A. and West Germany, while a similar delegation visited Japan in 1965. These delegations were sponsored by the National

Productivity Council with the help of the various international bodies. These two study groups which consisted of various representatives of the industry as well as of Government submitted detailed reports incorporating their findings which throw light on the position of ancillary industry in these industrially advanced nations. We have given in Appendix VIII and Appendix IX the recommendations of these two study teams.

5.4.3. With the emergence of an ancillary sector, the demarcation of items normally to be developed in the ancillary sector, and those to be developed either by the vehicle manufacturers or ancillary manufacturers was made by a Government circular issued in March 1965 which has given an impetus to the automobile ancillary industry. We have discussed this issue in detail elsewhere in this report.

5.4.4. The industry made rapid progress during the Third Plan period particularly in the later part and production was greatly expanded in the case of old items. Besides important new items like carburettors, fuel pumps, steering gear, electrical equipment (Dynamos, starter motors, voltage regulators, head lamps, distributors, electric horns, windscreen wiper motors, arms and blades, etc.) wheels and rims transmission gears, servo brake system, dash-board instruments, steering wheels, garage equipment like hoists, car washers, garage compressors and lubricating equipment were also produced during this plan period. The production of automobile ancillaries in terms of value which stood at Rs. 12 crores during the first year of the Third Plan rose to Rs. 52·8 crores during the final year of the Third Plan as compared to the target of Rs. 25 crores for the Third Plan period. It will, therefore, be seen that the production of motor vehicle parts exceeded the target by a comfortable margin. The production in the organised sector has further increased to Rs. 64.1 crores during the year 1966-67.

5.4.5. The progress made in the manufacture of automobile ancillaries can be judged from the value of production indicated below:—

Year	Value of Production (In Rs. Crores)
1956—57.	2.3
1957—58.	3.0
1958—59.	5.0
1959—60.	7.5
1960—61.	9.0
1961—62.	12.0
1962—63.	20.0
1963—64.	29.0
1964—65.	40.3
1965—66.	52.8
1966—67.	64.1
1967—68 (April—September)	32.2

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6.1. Present Position

6. Present position capacity and production.

6.1.1. There are at present more than 170 firms which have been approved for the manufacture of automobile ancilary items and borne on the books of the D.G.T.D.'s Automobile Ancillary Industries Directorate. Out of 170 firms listed with D.G.T.D. Ancillary Directorate mentioned above, 140 firms are said to be in production. These do not include the firms which are engaged in the manufacture of storage batteries, automobile bulbs, leaf springs, ball and roller bearings, timing and driving chains, castings and forgings, tyres and tubes and other rubber components used in automobile manufacture. These items are under the purview of other Directorates of the

D.G.T.D. In 1961, the investment in automobile ancillary industries as such was Rs. 6 crores. Since then the industry has made rapid progress. According to the A.I.A.A.I.A. the total capital employed in the ancillary sector in 1966 was Rs. 51 crores and the industry produced ancillaries worth about Rs. 82 crores. The total labour employed in this industry was estimated to be 45,000 in 1966.

6.1.2. Although the production of ancillaries has increased the industry is still beset with difficulties. The A.I.A.A.I.A. has observed as follows in this connection: "In the first place, the demand for O.E. components is very small, being limited to the number of vehicles produced in the country, and this small volume of O.E. demand is necessarily shared by two or three or even more ancillary manufacturers producing a given component. The volume that each competing manufacturers gets is thus further reduced with the result that none of them is able to produce components economically and cheaply primarily because of the lack of volume. With regard to replacement the available volume is by no means large compared to foreign standards. An added disadvantage here is that the available volume is not only shared by the genuine ancillary manufacturers but by a large number of spurious manufacturers in the unorganised sector who predominate. These spurious manufacturers who do not have the necessary equipment to manufacture a precision product and who operate on sub-standard raw materials are able to quote very low prices in the replacement market. Thus, the available volume for a genuine ancillary manufacturer, whether O.E. or replacement, is pitifully small compared to foreign standards. This is no doubt reflected in our costs and prices—a phenomenon which will continue till such time as the automobile market in India substantially expands."

6.2. Number of units

6.2.1. A statement furnished by the D.G.T.D. showing the number of units licensed for the manufacture of various automobile ancillaries and those in production is given in table 5. It will be seen from the same that out of a total of 109 important components and sub-components only for eight there is no unit which has gone into production. There are 38 items with only one unit in production, 20 items with two units each, and another 20 items with three units each. For the remaining 23 items there are more than three units each in production.

TABLE 5

Statement showing number of units licensed for ancillary items

Sl.No.	Item	No. of units licensed	No. of units in production
1	2	3	4
	I. Engine		
1	Pistons	3	3
2	Piston rings	3	2
3	Gudgeon pins	4	1
4	Circlips	1	1
5	Cylinder liners	6	6
6	Cylinder heads	1	Nil
7	Engine valves	4	3
8	Valve guides	2	2
9	Tappets	2	1
10	Valve inserts	1	1
11	Push rods	2	1
12	Bundy welded tubings	1	Nil
13	Oil pumps and spares	1	1
14	Filters	5	5
15	Filter elements	2	2
16	Filter inserts	4	4

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TABLE 5—(*Contd.*)

1	2	3	4
17	Filter assembly/cartridge	1	1
18	Gaskets	3	3
19	Finished crankshaft	1	1
20	Flywheel ring gear	2	1
21	Thinwalled bearings and bimettalic strips	3	3
22	Bimetal strips	1	1
23	Thickwalled bearings	1	1
24	Tramsmission roller chains all types excluding bicycle chains	7	1
	II. Clutch		
25	Complete clutch assembly	4	3
26	Clutch plates	4	2
27	Clutch facings	3	3
	III. Transmission		
28	Gears and shafts	3	2
	IV. Cooling		
29	Water pumps	1	1
30	Radiators	6	6
31	Oil/Air cooler	1	1
32	Oil/Water cooler	1	1
33	Inter cooler and after cooler	1	1
34	Water thermostat	1	1

TABLE 5—(*Contd.*)

1	2	3	4
	V. Fuel		
35	Carburettors	4	3
36	Fuel pumps	5	3
37	Fuel pump diaphragms	1	Nil
38	*Fuel injection equipment:*		
	(a) Multi cylinder pumps	1	1
	(b) Single cylinder pumps	3	3
	(c) Delivery valves	4	3
	(d) Elements	4	4
	(e) Nozzles	3	3
	(f) Nozzle holders	3	3
39	Rotor pumps	1	1
40	Fuel hoses	1	1
41	High perssure hoses	2	2
	VI. Electrical		
42	Spark plugs	2	2
43	Switches and flashers	6	
44	Lamps	10	8
45	Electric horns	8	7
46	Horn relays	5	3
47	Horn rings and buttons	1	1
48	Ignition coils	3	3
49	Voltage regulators	6	6
50	Distributors	3	3

TABLE 5—(*Contd.*)

1	2	3	4
51	*Distributor accessories*		
	(a) Rotors and caps	2	2
	(b) Contact sets	2	1
	(c) Condensers	1	1
52	Solenoids	2	2
53	*Windscreen wiper assembly.*		
	(a) Wiper motors	3	3
	(b) Windscreen arms and blades	1	1
54	Dynamos	4	4
55	Starter motors	4	4
56	Governors	1	Nil
57	Storage batteries	12	12
	VII. Exhaust		
58	Silencer mufflers, etc.	1	1
	VIII. Propeller Shafts		
59	Universal Joints	5	2
60	Propeller shafts	1	1
	IX. Suspension Front		
61	Shock absorbers	5	5
62	Tie rod ends/drag links	4	3
63	King pins, shackle pins, etc.	8	7
	X. Rear Axle		
64	Axle and axle shafts		

TABLE 5—(*Contd*)

1	2	3	4
	XI. Steering		
65	Steering linkages	1	1
66	Steering gears	2	1
67	Steering wheels	2	2
	XII. Brakes With Brake Drums		
68	Brake Assembly	2	2
69	Air brakes (complete foundation brakes)	1	1
70	Master Cyliner Components	2	2
71	Hydraulic brake hoses	3	3
72	Brake linings	5	4
73	Brake drum assembly	5	3
74	Hubs	1	1
75	Hub caps	1	1
	XIII. Wheels		
76	Wheels and rims	2	2
77	Tyre tube valves	2	1
	XIV. Frame and Chassis		
78	Leaf springs	17	14
	XV. Body and Upholstery		
79	Window channels and weather strips	1	Nil
80	Automobile Pressings	3	2
81	Lifts and hoists	5	5

TABLE. 5—(*Contd.*)

1	2	3	4
82	Doorlock/Remote control	1	1
83	Window regulators	1	1
84	*Safety glass*		
	(a) Laminated variety	3	3
	(b) Toughened variety	2	2
	(c) Curved variety of toughened glass	2	2
	XVI. Instrumentation		
85	Panel instruments	2	2
86	Clock panels	1	1
87	Tachographs	2	2
88	Wire harness panel harness	3	Nil
89	Taxi meters and spares	2	1
90	Control Cables	3	2
91	Battery Cables and end fittings	1	Nil
92	Ignition Cables and end fittings	1	Nil
	XVII. Tools		
93	Tyre inflators	5	5
94	Jacks (Mechanical and hydraulic)	11	10
	XVIII. Miscellaneous		
95	Oil seals	7	7
96	'O' rings	1	1
97	Ball and roller bearings	8	5
98	H. T. bolts and nuts	5	5
99	Tyres and tubes	12	8

6.2.2. An item-wise list of units manufacturing various components as furnished by the D.G.T.D. is given in Appendix X. We may point out, however, that there are some producers such as Motor Industries Company Ltd., and India Pistons Ltd., who manufacture more than one item and hence their names overlap in each of these items they manufacture. Again, there are certain items like cylinder heads, governors etc. where though capacity has been licensed and units have reportedly gone into production, no production figures are available.

6.3. Overall Capacity and Production

6.3.1. According to the A.I.A.A.I.A. the industry has a capacity to produce Rs. 125 crores worth of ancillaries during the Fourth Plan period. On the basis of information furnished by the D.G.T.D., we have given details about licensed capacity and production in quantity and value since 1963-64 for various ancillary items in table 6 on page 32.

6.3.2. We give below the annual licensed capacity and production for 1966-67 for some important ancillaries.

Name of the item	Anual licensed capacity	Production in 1966-67	
	(Nos.)	Q'ty. (Nos.)	Value in Rs. lakhs
1	2	3	4
1. Pistons	2,520,000	1,071,075	344.72
2. Piston Rings	16,500,000	10,911,700	130.92
3. Piston Pins	2,610,000	603,827	(Value included in Pistons.)
4. Cylinder Liners	918,000	200,517	33.65
5. Engine Valves	5,600,000	3,397,462	122.34
6. Gaskets	82,000,000	40,268,804	178.80

1	2	3	4
7. Clutch Assembly (sets) .	152,000	78,787	58.70
8. Clutch Plates	595,680	27,250	16.64
9. Radiators . . .	70,200	94,074	309.70
10. Carburettors . . .	230,800	26,041	16.18
11. Multi Cylinder Pumps .	77,000	45,359	254.69
12. Delivery Valves . .	1,828,080	743,147	41.26
13. Rotor Pumps . .	72,000	68,751	20.16
14. Spark Plugs . . .	2,760,000	2,292,127	53.74
15. Switches & Flashers .	869,000	210,702	29.81
16. Lamps	1,044,000	534,700	120.97
17. Electric Horns . .	525,000	212,120	44.20
18. Starter Motors . .	118,000	97,505	276.20
19. Batteries . . .	1,044,600	719,392 (1966)	N.A.
20. Propeller Shafts . .	200,000	67,410	163.08
21. Shock Absorbers . .	1,443,200	812,350	304.37
22. Kingpins etc. . . .	1,773,200	..	65.33
23. Wheels	624,880	527,440	441.84
24. Leaf Springs . . .	28,250 (Tonnes)	29,491(1966) (Tonnes)	..
25. Bus Bodies . . .	27,920	12,084	802.14
26. Safety Glass (Laminated) .	400,000 (Sq. Meters)	77,843(1966) (Sq. Meters)	..
27. Dash Board Instruments (Sets).	110,000	..	141.85

6.3.3. The D.G.T.D. has informed us that capacity has been established practically for the entire range of automobile ancillaries, but production of some of the items is not enough to meet the entire demand. Even for these items, schemes have been approved which are is various stages of implementation. The items for which there is not enough production at present are: Carburettors, rear axle tubes, axle shafts, long members of chassis frame, fuel pump, steering mechanism, special types of bearings and fasteners, and thermostat. As stated earlier, even for these items schemes have been approved to meet the needs of the industry.

6.3.4. According to the D.G.T.D. in addition to the usual allocation of foreign exchange for capital goods and also for maintenance purposes and release of controlled categories of some indigenous raw materials, the industry is being assisted by way of restrictions in the import of items that have been developed in the country in order that the indigenous industry could be firmly established.

6.3.5. Of the large number of schemes approved by the D.G.T.D. for the manufacture of automobile ancillaries, some envisage manufacture from raw material stage such as radiators, valves, pistons, piston rings, axle shafts, axle tubes, oil seals, gaskets, kingpins, etc. while complicated items like electrical equipment, carburettors, tipping gears etc. have been approved on the basis of phased programme of manufacture. The period of manufacturing programme varies from item to item depending upon the complexity of the items, ranging from one year to three to four years. We are informed by the D.G.T.D. that by and large, the phased manufacturing programmes approved earlier have been implemented, though the firms in some cases could not adhere to the time-schedule owing to various reasons such as non-receipt of capital goods licences in time, shortage of foreign exchange on maintenance account and non-availability of certain sub-contract items indigenously.

6.3.6. Statistics of production as furnished by the D.G.T.D. for the years 1963-64 to 1967-68 (April-September 1967) are given in the table 6 on page 32. As stated earlier production figures are not available in respect of all the items. In respect of some items such as cylinder heads, wire harness, panel harness, governors, though capacity is licensed, no unit has yet gone into production. At the time of our public inquiry, some doubts were expressed regarding production statistics of some of the ancillary items. We may, however, mention that Automobile Ancillary Industry comprises of a large number of big and small companies located in different States of India. These firms are borne on the books of different Directorates of the D.G.T.D. which maintain statistical data regarding them. Though there are 95 items of ancillary equipment for which capacity has been licensed by the Ancillary Directorate, production figures for only 56 items are available. This does not give a full picture of the entire industry. We, therefore, feel that D.G.T.D. should collect data of the Automobile Ancillary Industry as comprehensively as possible so that the real progress achieved by the industry could be measured. It is equally important that the A.I.A.A.I.A. and ancillary manufacturers should cooperate with the D.G.T.D. by furnishing requisite information. In this connection, we would like to point out that out of over 200 firms engaged in the manufacture of ancillary items to whom questionnaires were issued only 91 responded. It is necessary that up-to-date statistical information for such an organised industry should be available for future planning as well as to watch over the progress of the industry.

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TABLE

A. Statement Showing Annual Licensed Ancillary Items (Registered with the Directorate of the

(Value : Rs.

Sl.No.	Ancillaries item	Units or Capacity & Production	Annual Licensed Capacity	1963—64		1964
				Qty.	Value	Qty.
1	2	3	4	5	6	7
			I. Engine			
1.	Pistons	Nos.	25,20,000	792938	236.06	800085
2.	Piston Rings	,,	1,65,00,000	9408981	89.33	9418575
3.	Piston Pins	,,	26,10,000	468946	..	483792
4.	Cylinder Liners	,,	9,18,000	154507	20.12	156143
5.	Engine Valves	,,	56,00,000	1359992	41.50	2584524
6.	Filters	,,	2,06,400	78371	41.69	127515
7.	Filter Inserts	,,	11,01,200	636503	49.50	860042
8.	Gaskets	,,	8,20,00,000	23039861	143.9	34585449
9.	Fly Wheel Ring Gear	,,	2,72,000	..	..	25675
10.	Thin Walled Bearings	Sets	17,20,000	2453318	74.65	3708595
11.	(i) Thick Walled Bearings (ii) Bushings	,,	1,20,000 ..	.. ..	.. ..	.. ..
			II. Clutch			
1.	Clutch Assembly	Nos.	1,52,000	..	..	..
2.	Clutch Plates	,,	5,95,680	35501	21.93	39816
3.	Clutch Facing	M.Tonnes Nos. Rs.	60 10,00,000 20,00,000	52.88	19.91	93.67
			III. Transmission			
	Gears & Shafts	Tonnes	9,200	..	..	..
			IV. Cooling			
	Radiators	,,	70,200	67798	135.88	75084
			V. Fuel			
1.	Carburettors	Nos.	2,30,800	3958	2.00	1651
2.	Fuel Pump	,,	2,17,000	..	..	235

6

Capacity and Production of the Automobile Ancillary Industries

D. G. T. D.)

in lakhs)

	PRODUCTION					
65	1965—66		1966—67		1967—68 (April-Sept.,67.)	
Value	Qty.	Value	Qty.	Value	Qty.	Value
8	9	10	11	12	13	14
207.97	969553	304.57	1071075	344.72	663937	233.35
97.48	10250432	123.46	10911700	130.92	5220891	59·57
..	527489	..	603827	..	421616	(Value included in Pistons)
22.88	166621	26.68	200517	33.65	125457	22.19
90.39	2873646	106.99	3397462	122.34	1759328	71.26
45.44	125061	48.12	153803	43.33	76148	28.12
61.95	1023289	76.99	715011	65.23	334106	31.73
185.68	43864050	184.01	40268804	178.80	20978389	99.98
6.02	53660	12.43	45588	10.87	29148	107·18
130.68	6481122	224.57	7616277	208.38	2997279	108.24
..	5364	2.12	20683	7.18	14239	4.82
..	9714	0.68	74038	5.49	28395	2.44
23.05	60299	54.64	78787	58.70	27797	20.96
23.85	28706	17.70	27250	16.64	10199	8.08
27.67	109.61	31.16	94.08	23.73	81.36	18.60
8.90	..	40.55	30000	8.93	..	..
172.66	85527	214.69	94074	309.70	44699	142.20
0.67	5368	2.68	26041	16.18	11294	7.37
0.11	2187	0.33	44357	9.81	20375	3.87

TABLE

1	2	3	4	5	6	7
3.	*Fuel injection equipment*					
	(a) Multi Cylinder Pump .	Nos.	77,000	31658	193.36	35361
	(b) Single Cylinder Pump .	,,	1,82,080	71436	42.27	95256
	(c) Delivery Valves . .	,,	18,28,080	642859	23.39	740752
	(d) Elements . . .	,,	21,88,080	778606	96.61	858445
	(e) Nozzles . . .	,,	22,90,000	714830	100.41	707136
	(f) Nozzle Holders . .	,,	5,74,000	237077	54.65	301800
4.	Roter Pumps . . .	,,	72,000	2183	0.44	11945
		VI. Electrical				
1.	Spark Plugs. . . .	,,	27,60,000	1889238	42.14	2094865
2.	Switches & Flashers . .	,,	8,69,000	1733	0.44	53334
3.	Lamps	,,	10,44,000	145511	31.69	204981
4.	Electric Horns . . .	,,	5,25,000	139788	26.34	174844
5.	Horn Relays . . .	,,	4,13,000	16444	0.74	22248
6.	Ignition Coils . . .	,,	1,32,500	59636	7.05	133368
7.	Voltage Regulators . .	,,	2,63,000	38772	10.13	93507
8.	Distributors . . .	,,	1,17,500	10254	0.58	32537
9.	Contact Sets . . .	,,	7,00,000	..	..	31454
10.	Wiper Motor and Arms Assembly.	Nos. W.Mot.Arm & Blade.	1,37,500 7,00,000	..	4.33	..
11.	Dynamos	Nos.	1,75,000	41136	30.95	77476
12.	Starter Motors . . .	,,	1,18,000	38171	82.01	62107
		VII. Propeller Shafts				
1.	Universal Joints . . .	,,	11,28,000	..	..	..
2.	Propeller shafts . . .	,,	2,00,000	45395	72.26	62900
		VIII. Suspension Front				
1.	Shock Absorbers . . .	,,	14,43,200	345582	123.56	558,957
2.	Tie Rod Ends . . .	,,	15,28,000	231995	16.23	204,574
3.	King Pins, Shackle Pins, etc. .	,,	17,73,200	..	16.77	..
		IX. Rear Axle				
	Axle & Axle Shafts . .	Nos.	Not uniform	..	..	..
		X. Steering				
1.	Steering Gears . . .	,,	70,000	..	..	..
2.	Steering Wheels . . .	,,	55,000	12295	4.01	24112 (in Small)

6—(*Contd.*)

8	9	10	11	12	13	14
243.05	43246	248.13	45359	254.69	20025	123.78
53.87	145520	76.68	217174	97.72	116767	52.45
27.64	1085104	38.54	43147	41.26	377685	21.40
101.30	1100205	128.90	895991	146.61	557297	90.34
83.37	1068810	141.74	1210888	172.19	496006	85.52
72.64	374834	89.07	470248	100.71	241552	54.51
4.13	114189	16.66	68751	20.16	24482	8.84
47.47	1990158	45.42	2292127	53.74	1070192	26.87
6.77	172820	17.22	210702	29.81	88966	13.51
41.43	335599	52.46	534700	120.97	265937	59.44
39.66	34055	51.84	212120	44.20	69694	16.98
0.95	47126	2.43	58216	3.00	24917	1.31
18.07	124779	18.51	154963	27.83	79338	15.22
26.75	113165	39.35	123805	49.53	64377	27.20
30.38	45780	30.83	48116	33.19	21355	13.34
4.71	84200	.02	52359	7.38	6037	1.81
6.99	276267	26.52	488475	50.91	265122	25.59
77.79	7568	103.55	105881	147.91	43564	65.40
159.84	88500	235.35	97505	276.20	44576	119.40
..	..	..	74774	23.11	25665	8.98
99.64	67552	117.73	67410	163.08	30431	76.82
205.08	643375	222.59	812350	304.37	331213	124.76
53.96	189393	33.36	360413	64.93	199152	54.27
19.21	..	26.35	..	65.33	..	10.03
..	..	..	27275	16.19	11170	9.28
..	49	0.30	4357	9.80	6516	12.93
3.79	46644 (Scale Industry)	15.94	68030	26.00	38983	14.88

TABLE

1	2	3	4	5	6	7
	XI. Brakes with Brake Drums					
1.	Brake Equipment	..	..	..	..	..
2.	Complete Foundation Brake	Sets	96,000	..	..	..
3.	Brake Hoses	Nos.	480,000	252429	10.08	299546
4.	Brake Linings	Meters M. Tonnes	292,610 3,190	88730	155.97	118450
5.	Brake Drums	Nos.	78,400	8820	6.19	7871
6.	Brake Parts	..	..	..	87.51	..
	XII. Wheels					
1.	Wheels and Rims	Nos.	624,880	335287	261.13	429585
2.	Tyre Tube Valves	,,	3,800,000	368465	8.37	2396416
	XIII. Body With Up-Holstery					
1.	Bus Bodies	,,	27,920	5588	377.21	9892
2.	Auto Pressing	Tons	15,169	..	24.35	..
	XIV. Instrumentation					
1.	Dash Board Instruments	Sets	110,000	..	57.61	..
2.	Taxi Meters	Nos.	9,600	..	..	227
	XV. Tools					
1.	Tyre Inflators	Nos.	74,000	21219	0.72	22174
2.	Jacks	,,	87,750	5394	12.18	8889
	XVI. Miscellaneous					
1.	Oil Seals	Nos.	3,678,000	2378861	36.33	2630751
2.	Tyre Tube Valves Cores & Caps	,,	Included in Tyre Tube Valves.	..	..	..

6—(*Contd.*)

8	9	10	11	12	13	14
:						
16.06	..	70.30	..	85.05	..	72.45
39.17	..	108.26	145317	202.46	48111	80.54
14.36	660647	18.12	195041	21.69	119438	10.21
213.97	128324	263.47	145283	319.45	83789	162.79
6.76	9130	5.27	7508	4.36	4814	2.79
137.17	..	161.75	..	220.71	..	128.86
322.16	647476	435.04	527440	441.84	246130	213.37
37.06	5065405	38.21	3183482	32.78	2003467	16.74
488.89	15616	654.69	12084	802.15	3765	292.83
42.49	..	42.54	..	120.10	..	56.39
125.37	..	122.72	..	141.85	..	60.53
3.36	388	3.40	507	8.59	346	6.07
0.82	4347	0.24	2198	0.23	1096	0.14
20.23	13269	22.15	7585	8.22	4024	4.01
40.94	4339378	66.52	7004774	97.26	3046155	48.39
..	4657097	5.88	7089401	5.40	4120817	2.27

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TABLE 6—(*Contd.*)

B. Statement showiug annual licensed capacity and production of the ancillary items (registered with the other Directorates of the D. G T. D.)

Ancillary item	Annual licensed capacity	Units for capacity & production	Production				
			1963	1964	1965	1966	1967
			Qty.	Qty.	Qty.	Qty.	Qty.
1	2	3	4	5	6	7	8
1. Storage batteries . . .	1,044,600	Nos.	690510	767004	745028	719392	800414
2. Leaf springs . . .	28,250	Tonnes	22979	23063	29480	29491	24519
3. Ball and roller bearings .	269.86	Lakh Nos.	49.37	58.84	82.48	91.91	100.70
4. H. T. Bolts & Nuts . .	7,954	Tonnes	648.81	1411.71	5277.90	5220.10	3440.37 (Jan.-Nov.)
5. Transmission roller chains all types excluding bicycle chains	100,000	Nos. (for 1 unit only)	39340	71607	94718	138184	42.47 (Lakh Rs.)
6. Tyres and tubes . . .	4,853,200	Nos.(Tyres)	2049761	2215628	2497356	2490330	2612854
		(Tubes)	2258384	2389363	2539895	2349880	2906680
7. *Safety glass*							
(i) Laminated . . .	400,000	Sq. mts.	150164	104748	89831	77843	3162000
(ii) Toughened . . .	250,000	Sq. mts.	..	89531	640491	187591	120000
(iii) Curved variety of toughened glass (For wind shield).	400,000	Pieces	..	..	..	..	..

6.3.7. **Statistics of production in ancillary industries—published by A.I.A.A.I.A.**—The All-India Automobile and Ancillary Industries Association published in 1967 details of the value of production of 88 ancillary items in seven groups namely, engine parts, electrical parts, drive transmission and steering parts, suspension and braking parts, equipments, chassis and body parts and miscellaneous items. The figures given by the Association are for calendar years. Full details of the same are given in Appendix XI and a summary of which is given below:

TABLE 7

Statement showing the value of production of certain automobile ancillary items during 1961 *to* 1966

(Rs. in Crores)

Name of the groups	1961	1962	1963	1964	1965	1966
1. Engine Parts . .	8.06 (45.3)	10.41 (40.0)	13.93 (37.3)	17.63 (35.5)	21.22 (34.5)	26.06 (31.9)
2. Electrical parts . .	0.66 (3.7)	0.99 (3.8)	2.21 (5.9)	3.98 (8.0)	5.49 (8.9)	6.52 (8.0)
3. Drive transmission and steering parts.	1.24 (7.0)	3.04 (11.7)	5.92 (15.8)	8.38 (16.8)	10.80 (17.6)	13.41 (16.4)
4. Suspension and braking parts.	3.68 (20.6)	5.20 (20.0)	7.47 (20.0)	9.63 (19.4)	12.12 (19.7)	17.76 (21.7)
5. Equipments . .	0.83 (4.7)	1.19 (4.6)	2.08 (5.6)	3.08 (6.2)	3.20 (5.2)	4.18 (5.1)
6. Chassis & body parts .	0.74 (4.1)	1.18 (4.5)	1.34 (3.6)	1.92 (3.9)	2.54 (4.2)	3.36 (4.1)
7. Miscellaneous . .	2.60 (14.6)	3.99 (15.4)	4.42 (11.8)	5.08 (10.2)	6.08 (9.9)	10.48 (12.8)
TOTAL .	17.81 (100)	26.00 (100)	37.37 (100)	49.70 (100)	61.45 (100)	81.77 (100)

(Figures given in brackets are percentages to total).

It will be seen from the above table that the value of production in ancillary industry which was Rs. 17.81 crores in 1961 rose nearly five times to Rs. 81.77 crores in 1966 and that out of the total production, engine parts and suspension and braking parts groups account for more than one half of the total value. During the six year period the production of electrical parts and transmissions and steering parts increased by about 10 times compared to that in 1961.

6.3.8. The following comparative table of the value of production of 20 items shows the increase in their production in 1966 as compared to that in 1961.

TABLE 8

Statement showing the production in terms of value of some motor vehicle parts and components during 1961 *and* 1966

(Rs. in thousands)

Sl.No.	Name of the item	1961 Rs.	1966 Rs.
1	Leaf springs	20,289	60,480
2	Brakes and parts	697	45,363
3	Wheels	Nil	44,184
4	Pistons and Piston pins . . .	11,435	36,103
5	Fuel Injection pumps (Diesel) . .	20,437	35,148
6	Radiators	7,861	33,649
7	Brake Linings	10,501	31,799
8	Starter Motors	1,045	27,945
9	Shock absorbers	3,098	25,534
10	Fuel injection nozzles	8,230	23,717
11	Thinwall bearing and bushes . .	2,565	20,888
12	Clutch assembly & clutch plates . .	4,259	19,612
13	Gaskets	4,500	17,880
14	Ferrous and non-ferrous castings . .	4,870	17,129
15	Propeller shafts & universal joint cross assemblies	..	16,910
16	Generators	1,422	14,737
17	Fuel injection pump elements . .	4,792	13,989
18	Inlet and exhaust valves . . .	2,355	12,234
19	Dash board instruments . . .	2,186	12,064
20	Ball and roller bearings . . .	3,552	11,919
	Total of all the ancillaries . .	178,194	817,748

6.3.9. The A.I.A.A.I.A. has done commendable work in bringing out a yearly brochure of statistics of production of ancillary items in money value for the years 1961 to 1966. It is desirable that quantitative statistics should also be collected and published as this would give a more accurate picture of the progress of the industry in as much as the figures in terms of value alone, particularly in the context of inflationary conditions prevailing in our country, are likely to give a distorted picture.

6.4. New Units licensed

In addition to the manufacturers of various ancillaries referred to in para 6.2.2. the D.G.T.D. has also given us a list showing the additional names of firms to whom licences/registration/letter of intent have been issued and the same is given in table 9.

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TABLE 9

List of firms to whom licences/registration/letters of intent have been issued

Sl. No.	Name & address of the firm	Description of item	Capacity per annum
1	2	3	4
1	Anand Automobiles, Mulund, Bombay.	Tie Rod Ends	5,00,000 Nos.
		Drag Links	1,00,000 ,,
2	India Radiators, Madras	Heavy Duty Radiators	1,800 ,,
3	S. D. Pandya, 51, Warden Road, Bombay.	Carburettors	60,000 ,,
4	H. F. Higgens (Eastern) Pvt. Ltd., Bombay.	Water Pump kits	75,000 ,,
		Suspension kits	15,000 ,,
		Wallgauge assy.	1,000 ,,
		Pencil type	25,000 ,,
		Pressure Gauge Water Pump.	5,000 ,,

TABLE 9—(*Contd.*)

1	2	3	4
5	Dhanda Engineers Pvt. Ltd., Delhi.	Bearing caps	20,000 sets
		Brake drum assy.	1,00,000 sets
		(Steering Gear)	15,000 pairs
		Knuckles Tappets	1,20,000 Nos.
6	Sawhney Kirkwood Commutators, Bombay.	Commutators	5,00,000 ,,
7	Injecto Pvt. Ltd., Jaipur	Fuel Pump Diaphragms	1,00,000 Sets
8	Automobile Products of (I) Ltd., Bhandup Bombay.	Clutch Facings	2,00,000 Nos.
9	Universal Radiators, Coimbatore.	Intercoolers/Aftercoolers,	18,000 Nos.
10	Usha Martin (Wire Ropes) Ltd., Calcutta.	Control cables	500 Nos.
11	Western Thomson(I) Pvt. Ltd., Madras.	Water Thermostats	1,20,000 Nos.
12	Usha Automobile & Engg. Co. Pvt. Ltd. Calcutta.	Trunk Lid handles	60,000
		Driver handles	1,00,000
		Steering locks	1,00,000
		Petrol caps . . .	60,000 .
13	Luk Auto-Ancillary Ltd., New Delhi	*Clutch discs:*	
		(a) for Scooters	60,000
		(b) for Tractors etc.	36,000
		(c) for Diesel engines	60,000
14	Fritz & Singh, Calcutta	Complete filters (Micro water separators).	200 Nos.
		Replacement elements (For micro filters & water separators).	1,000 sets.
15	Usha Circlips Corpn., Bombay.	Circlips	1,50,000 Nos.

TABLE 9—(*Contd.*)

1	2	3	4	
16	Globe Auto Electricals Ltd., Bombay.	Starter drives	50,000	Nos.
17	Jaya Hind Industries, Poona.	Plywheel Magnetoes	40,000	Nos.
		Pressure & gravity die cast auto parts.	400	Nos.
18	Gas Cylinder (I) Ltd., New Delhi.	Axle Tubes	1,20,000	Nos.

7. Relationship between the vehicles manufacturers and the ancillary manufacturers

7.1. The Automobile industry has to rely to a considerable extent on the ancillary industry for the supply of numerous parts and components needed in the course of its assembly operations of complete vehicles. All over the world the automobile industry is so organised that the manufacturers of complete vehicles restrict themselves to essential operations involved in the production of main assemblies and prefer to buy the sub-assemblies and the specialised components from the ancillary manufacturers. The element of bought-out items may range from 60 per cent to 70 per cent of the cost of vehicles. Hence there is a good deal of mutual dependence between vehicle manufacturers and the manufacturers of components. The ancillary manufacturers undertake the production of components for various makes and models in which they are specialised both for original equipment as well as replacement while the vehicle manufacturers are normally inclined to restrict their production of components to their own makes and requirements. The manufacturer of ancillary items can, therefore, cater to a bigger market because of his larger volume and can achieve a high degree of specialisation even if it may be in a comparatively limited field in which he operates. The ancillary industry performs another important function regarding the maintenance of the vehicles on the road by supplying components for replacement. The A.I.A.A.I.A. has claimed that it plays an equally important part even in the tractor industry since a tractor like an automobile, is an assembled product and a considerable number of tractor parts are similar to automobile parts.

7.2. Duplication of manufacturing capacity

Under the phased manufacturing programme of development of the automobile industry approved by the Government in 1953 the vehicle manufacturers produced as many components as they could in order to improve the indigenous content of these vehicles. At that time the ancillary industry was not developed. Slowly the ancillary sector came into existence mainly in response to the replacement demand particularly for fast moving parts. Thus some duplicate capacity was built up in the vehicle factories as well as in the ancillary sector for the manufacture of same components. According to the A.I.A.A.I.A. the items manufactured both in the automobile plants and ancillary sector are pistons, valves, radiators, shock absorbers, silencers, propeller shafts, universal joints, suspension leaf springs, spring U bolts, centre bolts, shackle bolts, shackle pins and some other items like castings and forgings. The Association has expressed the fear that expansion of capacity for the manufacture of the above items in the automobile plants and possible diversification to produce new items might retard the progress of the ancillary industry. We are, however, informed by the D.G.T.D. that the policy of demarcation as set out in the Government circular dated 16th March, 1965 is being adhered to.

7.3. Discussing the problem of integration, the A.I.A.A.I.A. has claimed that automobile manufacturers in India have invested a great deal of capital in equipment for operations that are different from those of the main plant which in other countries are the function of specialised ancillary manufacturers to supply. It has also quoted the observation from the study made by the National Council of Applied Economic Research that the "List of bought-out components though impressive is still far behind the desired levels of ancillary production". The Association feels that there is considerable scope for the utilisation of ancillary capacity for vehicle production and in order to encourage this trend the list of items demarcated for the ancillary industry should not only be expanded, but further expansion of ancillary capacity already established in vehicle factories should be restricted at least for the next 5 years to enable the ancillary manufacturers to improve their level of performance from the present 20 per cent to at least 30 per cent in the Fourth Plan. The Association feels that the Government circular demarcating the items to be normally manufactured by ancillary industry has assisted the growth of the industry. Referring to liberalization of licensing policy and permitting diversification of output by scheduled industry, the ancillary industry has pleaded that this liberalisation should not create any new capacity or increase the existing capacity for ancillaries with the vehicle manufacturers.

7.4. "MAKE" or "BUY" policy of vehicle manufacturers

The A.I.A.A.I.A. has observed that according to the recent study made by the National Council of Applied Economic Research, the value of bought-out ancillary components in a vehicle assembled in the country is not more than 20 per cent of its ex-factory price as against 60 to 70 per cent in other advanced countries. The policy of "make" rather than "buy" of the vehicle manufacturers had also been commented upon by the team of American Experts in their "Survey of Indian Automobile and Ancillary Industry" prepared by U.S. Team of Experts (George Fry and Associates) in 1961. The team felt that procurement difficulties of vehicle manufacturers are there but the practice of making as many components as possible leads to duplication of costly facilities in vehicle and ancillary sectors. The team went to the extent of observing that vehicle manufacturers are in the ancillary industry and that too in a big way with major items and major facilities. It also observed that both the sectors of the industry would go a long way in expanding production of vehicles without additional foreign exchange for more equipment if present facilities were better utilised. The President of the A.I.A.A.I.A. in a recent speech has observed that "the decision to buy or make must be governed purely by quality and price and not any other ideological consideration or historic precedents. The ultimate criterion is to ensure that the vehicle prices to the end consumer are kept as low as possible. The spirit behind this philosophy is yet to be fully appreciated." Now that the ancillary industry has developed it is advisable that the automobile manufacturers should confine themselves to the production of essential items only. The ancillary industry should also try to attract the vehicle manufacturers by offering components at lower prices with assured delivery schedules.

7.5. Some of the ancillary units have complained to us that the automobile manufacturers do not place orders in good time and that changes in specifications are introduced without informing them in advance with the result that when orders are placed they do not get adequate time to make these changes and fulfil orders as per schedule. It was also represented to us that the original equipment manufacturers change their design without giving suitable warning to the ancillary manufacturers with the result that the latter were saddled with stocks of obsolete products which could not be utilised for any other purpose. It is, therefore, desirable that the vehicle manufacturers and ancillary manufacturers should work in close co-operation and that there should be close liaison between them. Automobile manufacturers should give ancillary producers all the technical assistance when needed. In the interest of both the industries the relationship between them should be harmonious.

7.6. The Jha Committee in 1960 had commented on the question of captive units and expressed concern. It observed : "Another disquieting feature though not too widespread is that in many instances ancillary units are in fact, if not in name, the subsidiaries of main producers of automobiles or engines. When any kind of a special relationship exists between the ancillary industry and the main producer the need for scrutiny over the prices charged is very much greater. In general, we recommend that ancillary production should be entrusted to wholly independent units and not to firms which are connected with the main producers." We have been given some information on this but despite efforts, we have not been able to investigate into this matter as associate or captive units are apparently independent concerns and the links with the automobile manufacturers, if any, are indirect, not easy to uncover.

8. Foreign collaborations

8.1. According to the information furnished to us by the A.I.A.A.I.A. there are 76 units which are in collaboration with 110 foreign firms. Out of these, 46 are from U.K., 32 from West Germany and 20 from U.S.A. The remaining are from France, Italy, Switzerland, Australia etc. The collaboration agreements are by and large for ten years though in a few cases they were for five years with a provision for subsequent renewal. A number of these agreements are for financial as well as technical collaboration. The financial collaboration generally takes the form of participation in the share capital of the Indian concern the percentage of capital participation varying from 25 to as high as 75. The method of remuneration to collaborators is not uniform. In some cases a lump sum payment on signing the agreement is specified plus a royalty or technical service fee or engineering fee on sale proceeds. The royalty which did not exceed five per cent is sometimes based on net sales, though there are some instances of basing the same on taxable profits or manufacturing costs. There are some agreements with restrictions on exports. The restrictions take the form of obtaining a written consent from its foreign collaborators or exports are allowed to specified countries only or freely to countries where collaborator has no obligation. The agreement also sometimes specifies exports only as component parts of Indian vehicles exported.

8.2. At the public inquiry the question of continuance of foreign collaborations came up for consideration. It was argued that the development of automobile ancillary industry was largely due to the assistance rendered by foreign collaborators as a result of which the industry has been able to show quicker progress during the last few years. Some participants stated that the collaboration agreements are necessary in order to keep abreast of research and development in technology in advanced countries which is a continuous process. The representatives of the A.I.A.A.I.A. have stated that Government have consistently pursued a policy of creating two or more competing units for each product with the result that foreign collaborations have been obtained by these competing units from different countries for the same product and on an average, there are two or three competing units for each product with an equal number of foreign collaborations. The Association has given the following instances where the number of collaborations are more than three:—

Items	No. of foreign collaborators
Cylinder liners	4
Engine valves	4
Filters	5
Voltage regulators	4
Distributors	4
Clutch assembly	5
Shock absorbers	4
Brake assemblies	5
Electric horns	4
Lamps	5
Jacks	4
Garage equipments	4
Bolts, nuts etc.	4

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The Association is of the view that there are a few ancillaries in respect of which foreign technical collaboration could have been dispensed with in as much as these items were already being manufactured in the country to O.E. specifications without imported know-how. The Association has also informed us that lately the C.S.I.R. has started consulting it on proposals involving foreign collaboration and that it has consistently opposed the import of foreign know-how when such know-how is already available in the country.

8.3. The Ministry of Industrial Development and Company Affairs have stated that they examine each proposal seeking foreign collaboration on its merits and allow only if they are satisfied that indigenous know-how for the item is not available. Whenever foreign collaboration has been approved in the case of any automobile ancillary item, the general principles governing approval of foreign collaboration cases, namely, (a) royalty rate should not normally exceed five per cent taxable of the net selling price, (b) foreign capital participation if at all considered necessary to cover the value of imported plant and equipment etc. should be on the minority basis, and (c) export should be allowed freely, are also applied.

8.4. The Mudaliar Committee has gone into various aspects of foreign collaborations in India and has submitted its report. We have referred to the principal recommendations of this Committee in our report on Continuance of Protection to Automobile Industry which we have already submitted. Here we would only add that considering the export potential of the automobile ancillary industry we are of the opinion that as and when collaboration agreements come up for renewal there should be some compulsion to remove restrictive clauses which hinder exports.

9. Small Scale Sector

9.1. As already observed earlier, a separate wing has been created under the Development Commissioner, Small Scale Industries, to develop ancillary industry in the small scale sector. Units with a capital investment of not more than Rs. 7.50 lakhs in plant and machinery fall within the small scale sector. There is a further relaxation of the monetary limit to Rs. 10 lakhs for small scale units declared as ancillaries to some specified industries.

9.2. The Federation of Associations of Small Industries of India has not been able to provide us with statistical data regarding number of units, items manufactured, installed capacity and production of ancillary items in the entire small scale sector. The Development Commissioner for Small Scale Industries (D.C.S.S.I.) could, however, supply us some information in regard to the number of units in each State, their estimated capital investment and production in terms of value. Even here the data are incomplete, e.g. while information in regard to the number of units existing in the States of Uttar Pradesh, Kerala and the Punjab is available, that for estimated investment is not available for the same and for the State of Maharashtra data are available for only 30 out of 56 units in that State. Similarly, information in regard to quantitative production is not available for most of the States. For six States it is available in terms of value. However, on the basis of this information it appears that there are at present over 175 units in the small scale sector with an estimated capital investment of about Rs. 3.0 crores excluding that of the units in the States of Uttar Pradesh, Kerala and Punjab. Of the 175 units as many as 56 are located in Maharashtra alone followed by Andhra Pradesh and Uttar Pradesh with 48 and 25 units respectively. The remaining are dispersed in other States save Orissa, Madhya Pradesh and the Union Territory of Goa where no small scale automobile ancillary unit is reported to be in existence.

9.3. The following table summarises the uniformly available information regarding the number of units, installed capacity and production of small scale units in terms of value for the period 1963 to 1966 for 124 units in six States.

TABLE 10

Installed capacity and production of automobile ancillary industry in Small Scale Sector in (terms of value)

(Rs. lakhs)

State	No. of Units	Installed capacity	Production				
			1963	1964	1965	1966 (Jan. to June)	1966 Estimated
Bihar . . .	5	23.80	3.40	8.12	7.33	7.77	15.54
Maharashtra .	56	233.50*	82.34*	19.71*	105.48*	44.35*	88.70*
Rajasthan .	5	63.00	N.A.	N.A.	N.A.	20.00	44.00
W. Bengal** .	3	30.14	2.46	4.61	6.69	3.85	7.70
Andhra Pradesh .	48	196.40	33.64	56.56	81.97	64.98	129.96
Madras . .	7	79.78@	21.57	34.47	56.25	62.08	124.16

*For 30 units only.

**For 3 units only.

@For 6 units only

9.4. The information given above indicates that production of ancillaries in Small Scale sector in terms of value is on the increase and over Rs. 4 crores worth of automobile ancillaries are supplied by this sector. It was also reported at the public inquiry that about 250 units were on the lists of automobile manufacturers supplying to them some item or the other comparable in quality as well as prices with those produced in the organised sector. It has been the policy of the Government to encourage the small scale sector and about Rs. 45 crores and Rs. 85 crores were provided in the Second and Third Five Year Plans respectively for extending various facilities to it such as technical guidance, workshop and laboratory facilities, training facilities, marketing assistance, export aid, credit facilities etc. Financial assistance is also being provided by the Reserve Bank of India, State Bank of India and State Governments on certain terms and conditions. It is, however, unfortunate that for this sector which plays a significant part in meeting the requirements of the automobile industry, full details about the number of units in existence, capacity, production, employment and investment are lacking. It is, therefore, difficult to estimate the total capacity and production, for the entire country.

9.5. As the small scale units are required to be registered with the Directors of Industries of State Governments, we recommend that full data of the small scale units particularly regarding capacity and production should be maintained by the State Governments.

9.6. Though the response to our questionnaire to the small scale units was very poor (about 33%) we have been able to get a glimpse of their problems. Almost all the units in the small scale sector who replied to our questionnaire complain of shortage of raw materials. Most of them have complained of high prices of raw materials when they had to procure them from the open market as the quota allotted to them was hardly sufficient for their manufacturing programme. It is, however, not understood as to how they are able to buy from the open market when the imports of raw materials are rigidly controlled. We feel that the raw material requirements of the small scale sector should be properly assessed and arrangements made for their steady supply to it. Some of them have also stated that they are not able to get sufficient orders from the large scale units.

9.7. According to D.C.S.S.I. automobile leaf springs, radiators and sealed beams have been excluded from free diversification to give protection to the small scale industries. The D.C.S.S.I. has, however, observed in his memorandum that though the automobile ancillary units in the small scale sector are encouraged and given facilities for their development in general, there is no policy decision favouring their development on a different footing by way of reservation of items for them.

9.8. Regardig quality, the D.C.S.S.I. has stated that the small scale units generally possess equipment for testing such as gauges, tools etc. to ensure that the quality of the goods supplied by them to large scale units is acceptable. The small scale units also avail themselves of outside facilities. According to the field investigations conducted by the Development Commissioner, the percentage of rejection was between 3 and 5 per cent only. This, if true in general for the small scale sector, can be said to be a creditable achievement.

9.9. Supply to Vehicle Manufacturers

A number of small scale units who have replied to our questionnaire have claimed that they are supplying several items as O.E. to the vehicle manufacturers, e.g. a Bombay unit has stated that it is supplying ventilator body, to Mahindra and Mahindra. It is also supplying items like ash tray, tail lamp, hooks for tool bag, sealed beam reflectors and switches to premier. A Delhi unit is supplying gasket shellac to TELCO and filter elements to Hindustan Motors, and filter assembly to Standard. Some of the small scale units have reported that they are not selling those items which are supplied as O.E. to the replacement market due to contractual obligations.

10.1. Present Licensing Policy

10. Industrial Licensing Policy

According to the current industrial licensing policy valid for the period from April 1968 to March 1969 applications for licences may ordinarily be rejected without reference to the Licensing Committee, for items like leaf springs. But expansion or diversification in the range of same products of the existing units could be considered. Applications for truck-mounted equipment will be considered on merits. On the other hand, applications for fresh licences for manufacture of radiators will ordinarily be rejected (except for expansion on merits) as this industry is reserved exclusively for development in the small scale sector. We understand from the Ministry of Industrial Development and Company Affairs that in licensing additional capacity for the manufacture of automobile ancillary items since the beginning of the third Plan, it has been its policy to licence additional capacity only if the capacity already licensed/installed is not sufficient to meet the country's requirements. Government, as a matter of policy, encourage the expansion/diversification of the existing units in preference to the establishment of new units.

10.2. Views on licensing policy

10.2.1. The A.I.A.A.I.A. has observed that till the end of 1963 the Licensing Committee followed a liberal policy and licensed a large number of manufacturers for each ancillary item and as a result there is the problem of too many manufacturing units for each product in a market the size of which is severely limited by the small volume of vehicles made in India. It has added that on hypothetical considerations like promoting internal competition, encouraging new entrants, which have nothing whatever to do with the economics of an industrial enterprise, several uneconomic units have been licensed for the manufacture of various components. As many as eight units are manufacturing electric horns, six units are in production of radiators, seven schemes were licensed for inlet and exhaust valves (of which three have lately been revoked), six each for filters, voltage regulators and clutch plates, five for fuel injection equipment and so on. The Association is of the opinion that too many units tend to restrict the operations of each to levels deemed inadequate for economic production and they are unable to expand scale operation to derive full advantage of mass production methods and obtain optimum production economies which alone will facilitate reduction in costs and prices. Referring to the current licensing policy under which all automobile ancillary industries, except truck-mounted equipment, are placed on the rejection list for licensing purposes it has stated that the damage done by the proliferation of uneconomic units in respect of several products, and low volume of production by each unit at high cost will continue to be a phenomenon in the industry for some considerable time to come at least until such time as the market for the products both in terms of increased production of vehicles and growth in vehicle population significantly expands.

10.2.2. We understand that in judging whether the existing manufacturing capacity for a product is adequate to take care of demand the Licensing Committee on whose recommendations the Ministry of Industrial Development and Company Affairs issues the licences, does not as a rule take into account the capacity of the small scale sector. This is perhaps because reliable data about the capability of the small scale sector are lacking. We have observed elsewhere in this Report that action should be initiated to assess the range and size of production of different ancillary items existing in the small scale sector.

10.3. Demarcation of ancillary items normally to be manufactured by ancillary industries and by the vehicle manufacturers

10.3.1. During the earlier stages the phased programme of development of the automobile industry approved by the Government in the year 1953 had made it obligatory on each vehicle manufacturer to reach the prescribed level of indigenous content in his vehicle. The vehicle manufacturers, therefore, started the manufacture of as many components as they possibly could. At that time the ancillary industry was not well developed and as a result the main manufacturers had to take up the manufacture of certain items themselves as a part of their assembly operations. With the development of the ancillary industry since the last decade a considerable duplicate capacity was thus built up in vehicle factories as well as in the ancillary sector. We understand from the A.I.A.A.I.A. that the following items viz. pistons, valves, radiators, shock-absorbers, silencers, propeller shafts, universal joints, suspension leaf springs, spring U bolts, centre bolts, shackle bolts, shackle pins and other items like castings and forgings are manufactured in both the sectors. The Association feels that this phenomenon of industrial verticalisation in the motor vehicle industry is a serious obstacle to the rapid development of the ancillary industry in as much as it has tended to discourage the entrepreneur generally from taking up the production of ancillary items.

10.3.2. In March 1965 the policy of demarcation of ancillary items normally to be manufactured by the ancillary industries and those which could either be made by vehicle manufacturers or by the ancillary manufacturers was notified *vide* Government letter No. A.E.Ind. 1(42)/62, dated 16th March, 1965. We have given details in Appendix XII.

10.3.3. We understand from the D.G.T.D. that the above policy of demarcation is now being followed but the automobile units whose programme of manufacture commenced before 1950 continue to make certain items now earmarked for the ancillary industry. At present, however, we understand that some of these manufacturers have developed or are trying to develop other sources for supply also of certain ancillary items which they are manufacturing. For instance, Hindustan Motors which is already manufacturing pistons and radiators, is also obtaining these items from India Pistons and India Radiators, Madras respectively. Similarly, Premier is obtaining shock absorbers from Gabriel India Ltd., Bombay. TELCO, Jamshedpur which manufactures crankshafts obtains this item from Bharat Forge Ltd., Poona.

10.3.4. The following table gives particulars of the percentage by value of components (a) directly imported (b) bought from ancillary manufacturers and (c) produced in their own factory by the various automobile manufacturers, during each of the last five years.

TABLE

The percentage by value of components (a) directly imported own factory by the various automobile manufacturers

Sl. No.	Name of Producer	Type of Vehicle	Per cent of components directly imported				
			1961-62	1962-63	1963-64	1964-65	1965-66
1		2	3	4	5	6	7
1	Hindustan Motors.	(i) Ambassador	29.9	25.4	15.5	15.5	9.9
		(ii) Bedford 167" WB Diesel truck.	47.2	29.7	28.9	28.8	19.4
2.	Premier Auto-	(i) Fiat Car	51.1	43.1	35.2	30.4	19.3
		(ii) Kew Truck chassis with Perkin Engine.	25.1	23.0	21.8	14.9	8.1
		(iii) Kew Truck chassis with Meadows Engine.	33.0	33.9	30.6	24.6	20.6
		(iv) Kew Truck chassis with PA made petrol Engine.	34.6	34.4	33.2	28.2	16.9
		(v) Kew bus chassis with Perkins Engine.	22.9	20.1	19.9	15.6	10.5
		(vi) Kew bus chassis with Meadows Engine.	32.3	32.5	28.0	25.5	16.8
		(vii) Short wheel base chassis .	60.2	60.7	62.3	40.6	45.6
3.	Standard Motors.	(i) Herald Saloon	56.6	54.9	43.0	40.4	27.8
		(ii) 1 tonne vehicle . . .	..	..	..	..	45.6
4.	Ashok Leyland	Comet chassis	56·4	41·6	36·4	33·0	22·4
5.	TELCO .	(i) L—312—42	19·8	17·7	16·9	12·0	9·0
		(ii) L—312—48	15.8	14.1	12·9	12.3	9.5
		(iii) L—1210—42	..	..	..	10·4	8.7
		(iv) L—1210—52	..	..	..	12·1	10·6
6.	Mahindra & Mahindra.	CJ-CB—Jeep	20·1	24·1	27·7	17·9	..
7.	Bajaj-Tempo	3-Wheeler	..	..	..	12·0	8·0
8.	Simpson & Co.	(i) P 6 V Bare Engine . .	17·7	10·4	8·2	8·6	7·6
		(ii) Do. for Kew Dodge chassis.	16·6	9·8	8·1	8·6	7·5
		(iii) Do. for Bedford chassis	16·4	7·6	7·9	8·2	7·3

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(b) bought from ancillary manufacturers and (c) produced in their during each of the last five years

Per cent of components purchased from ancillary suppliers					Per cent of components manufactured by producers themselves.				
1961-62	1962-63	1963-64	1964-65	1965-66	1961-62	1962-63	1963-64	1964-65	1965-66
8	9	10	11	12	13	14	15	16	17
16.7	21.7	29.7	30.2	31.5	53.4	52.9	54.8	54.3	58.6
47.1	58.1	56.8	57.7	58.1	5.7	12.2	14.3	13.5	22.5
21.9	26.1	27.9	32.2	41.7	27.0	30.8	36.9	37.4	39.0
49.9	53.0	53.3	55.9	64.9	25.0	24.0	24.9	29.2	27.0
34.8	26.8	23.4	31.0	36.6	32.2	39.3	40.0	44.4	42.8
24.2	27.1	27.9	30.2	42.7	41.2	38.5	38.9	41.6	40.4
50.5	53.1	52.8	56.3	62.8	26.6	26.8	27.3	28.1	26.7
30.4	30.2	29.3	30.3	40.6	37.3	37.3	42.7	44.2	42.6
14.0	15.8	15.8	21.4	21.8	25.8	23.5	21.9	32.0	32·6
17.4	16.5	20.8	23.0	29.3	26.0	28.6	36.2	36.6	42.9
..	..	..	..	28.7	..	..	..	..	25.7
41.4	55.2	58.0	61.3	71.7	2.2	3.2	5.6	5.7	5.9
19.1	20.6	22.9	25.4	26.1	61.1	61.7	60.2	62.6	64.9
18.0	19.1	21.4	23.3	24.9	66.2	66.8	65.7	64.4	65.6
..	..	..	27.0	27.2	..	..	..	62.6	64.1
..	..	..	24.6	25.1	..	..	..	63.3	64.3
22.0	22.0	20.6	29.6	..	49.9	53.2	51.7	52.5	..
..	..	..	45.0	47.0	..	..	..	4 .0	45.0
29.4	36.5	38.0	37.3	36.5	52.9	53.1	53.8	54.1	55.9
27.5	34.6	35.8	34.6	33.8	55.9	55.6	56.1	56.8	58.7
31.3	38.5	35.6	34.5	33.9	52.3	53.9	56.5	56.3	58.8

10.3.5. With a view to encourage development of ancillary industry we recommend that no further expansion of the existing capacity to manufacture ancillary items by the vehicle manufacturers should be permitted and that no licences for replacement of the machinery for the same should be issued wherever the ancillary industry can supply these ancillary items to them.

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CHAPTER III

ESTIMATES OF DEMAND

11. Estimates of demand

11.1. Estimates of demand for automobile ancillaries were prepared by the Working Group for Transport Equipment, Planning Commission. These covered 42 important components and parts for all automobile based on an estimated production of 340,000 vehicles per annum by 1970-71 consisting of 150,000 motor cycles, scooters and mopeds etc., 110,000 commercial vehicles, 60,000 passenger cars and 20.000 jeeps. The details are given below :

TABLE 12

Estimates of demand for ancillaries prepared by Working Group for Transport Equipment

Sl. No.	Name of part	Life in years		Requirement in 1970-71		
		Cars	Com. vehicles	O.E.	Replacement	Total
1	2	3	4	5	6	7
				(in thousand numbers)		
1	Piston assemblies .	7	3	1110	1690	2800
2	Piston rings . .	3	1	4570	21800	26370
3	Carburettors . .	20	20	220	..	220
4	Valves . . .	4	2	2220	5300	7520
5	Valve springs. .	8	4	2220	2650	4870
6	Tappets . .	20	20	2220	..	2220
7	Fuel filter elements .	2	1	680	3435	4115
8	Air cleaner elements					
9	Oil filter elements .					
10	Fuel pump diaphragms.	1.5	1.5	100	450	550

TABLE 12—(*Contd.*)

1	2	3	4	5	6	7
11	Complete water pump replacement kits.	3	2	190	475	665
12	Radiator cores .	6	6	190	550	740
13	Radiator tanks .	20	20	190	..	190
14	Gaskets . .	1	1	310	1770	2080
15	Thin wall bearing sets	3	3	2460	4730	7190
16	Fan belts . .	1	1	195	1000	1195
17	Fly wheel ring gears	2	3	195	462	657
18	Oil seals . .	2	3	1600	5000	6600
19	Leaf springs . .	10	3	..	..	..
20	Shock absorbers .	3	1	900	3530	4430
21	Steering gears .	Indefinite		310	..	310
22	Tie rod ends .	4	2	600	1460	2060
23	Brake hoses . .	4	2	1208	2652	3860
24	Brake linings .	4	2	1210	2650	3860
25	Brake master cylinder	15	15	1210	..	1210
26	Clutch assemblies .	15	15	310	..	310
27	Fuel injection pumps	..	15	90	..	90
28	Nozzle holders .	..	8	540	340	880
29	Nozzles . .	..	2	540	1350	1890
30	Nozzle elements .	..	4	540	680	1220
31	Delivery valves .	..	4	540	680	1220
32	Clutch disc linings .	3	2	310	990	1300
33	Universal joints .	6	2	525	1160	1685
34	Propeller shafts .	10	10	295	..	295
35	Wheels and rims .	15	15	1510	..	1510
36	Starter motors .	20	10	190	..	190
37	Dynamos . .	20	10	310	..	310
38	Ignition coils .	2	2	220	660	880
39	Distributors . .	20	10	100	..	100
40	Voltage regulators .	4	2	125	435	560
41	Spark plugs . .	1	1	470	5450	5920
42	Electric horns .	4	2	310	600	910

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11.2. The A.I.A.A.I.A. has also estimated demand for 62 items of ancillary equipment taking into account the production of passenger cars, jeeps and commercial vehicles by 1970-71 and estimated vehicle population by the same year. It has prepared two estimates one on the basis of the Planning Commission's and the other on the Development Council's data as follow:

	Estimate of vehicle production by 1970-71	*Estimated vehicle population by* 1970-71
A. Planning Commission		
Cars and jeeps	70,000 Nos.	5,35,000 Nos.
Commercial vehicles	85,000 Nos.	4,30,000 Nos.
B. Development Council		
Cars and Jeeps	95,000 Nos.	5,70,000 Nos.
Commercial vehicles	75,000 Nos.	4,20,000 Nos.

11.3. Our estimates of average vehicle production during each of the three years 1967-68, 1968-69, and 1969-70 are given below:

	Nos.
Heavy commercial vehicles (Over 9 tonnes)	383
Other commercial vehicles	53,300
Passenger cars	36,000
Jeeps and jeeplike vehicles	10,000
TOTAL	99,683

Out of the above, petrol driven vehicles will be 55490 Nos. and diesel driven 44193 Nos.

11.4. The Association's estimates of life expectancy of various parts are given in Appendix XIII and its estimates of demand on the two bases are given in Appendix XIV.

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11.5. The A.I.A.A.I.A. has assumed an average life of 12 years for cars and 10 years for commercial vehicles in projecting future population. Analysing the data for 10 years (1955-56 to 1965-66) however, it appears that during this period the population of passenger cars and jeeps increased by 2,52,216 Nos. The production of cars and jeeps in the the total availability during this period was 2,49,057 Nos. Import during the period amounted to 10,517 Nos. Thus the total availability during this period was 2,49,057 Nos. If these data could have been satisfactorily reconciled it would have been a useful guide to assess the average life or years of usage of various types of vehicles in India. We find, that the number of registrations are going up at a very substantial rate every year. Considering this trend we have allowed for an increase in vehicle population equal to half the indigenous production every year, to arrive at our estimates of vehicle population by 1969-70. On this basis the future population would be as follows :

In Nos.

Year	Passenger cars and jeeps	Commercial vehicles	Total
1955—66*	4,55,400	4,09,000	8,64,400
add	17,707	17,661	35,368
1966—67**	4,73,107	4,26,661	8,99,768
add	23,000	26,841	49,841
1967—68**	4,96,107	4,53,502	9,49,609
add	23,000	26,841	49,841
1968—69**	5,19,107	4,80,343	9,99,450
add	23,000	26,841	49,841
1969—70**	5,42,107	5,07,184	10,49,291

*Estimated by the Ministry of Transport and Aviation.

** Our estimates.

On this basis we estimate the requirements of 40 important ancillaries listed in the Working Group's Report to be as follows adopting the same estimates of life expectancy for various ancillaries as taken by the Working Group :

TABLE 13

Estimated requirements of ancillaries by 1969-70

Sl. No.	Name of part	Life in years		Estimated requirement by 1969-70		
		Cars	Commercial vehicles	O.E.	Replacement	Total
1	2	3	4	5	6	7
				(in thousand numbers)		
1	Piston assemblies	7	3	508	1324	1832
2	Piston rings	3	1	2356	18110	20466
3	Carburettors	20	20	56	..	56
4	Valves	4	2	1016	4128	5144
5	Valve springs.	8	4	1016	2064	3080
6	Tappets	20	20	1016	..	1016
7	Fuel Filter elements	2	1	300	2335	2635
8	Air cleaner elements					
9	Oil filter elements					
10	Fuel pump diaphragms	1.5	1.5	56	362	418
11	Complete water pump replacement kits.	3	2	100	434	534
12	Radiator cores	6	6	100	175	275
13	Radiator tanks	20	20	100	..	100
14	Gaskets	1	1	100	1050	1150
15	Thin wall bearings (Sets)	3	3	100	350	450
16	Fan belts	1	1	100	1050	1150
17	Fly wheel ring gears	2	3	100	440	540
18	Shock absorbers	3	1	400	2752	3152
19	Steering gear assemblies	Indefinite		100	..	100
20	Tie rod ends	4	2	200	778	978

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TABLE 13—(*Contd.*)

1	2	3	4	5	6	7
21	Brake hoses	4	2	400	1050	1450
22	Brake linings	4	2	400	1050	1450
23	Brake master cylinders	15	15	100	..	100
24	Clutch assemblies (Multicylinder Pumps)	15	15	100	..	100
25	Fuel injection pumps	..	15	44	..	44
26	Nozzle holders	..	8	264	378	642
27	Nozzles	..	2	264	1512	1776
28	Nozzle elements	..	4	264	756	1020
29	Delivery valves	..	4	264	756	1020
30	Clutch disc linings	3	2	100	434	534
31	Universal joints	6	2	328	1196	1524
32	Propeller shafts	10	10	164	..	164
33	Wheels	15	15	608	..	608
34	Starter motors	20	10	100	..	100
35	Dynamos	20	10	100	..	100
36	Ignition coils	2	2	56	272	328
37	Distributors	20	10	56	..	56
38	Voltage regulators	4	2	100	389	489
39	Spark plugs	1	1	241	2172	2413
40	Electric horns	4	2	100	389	489

11.6. The following table shows the comparison between the licensed capacities and our estimates of demand for various ancillaries by 1969-70. The figures, however, do not indicate the actual extent of short-fall or excess of demand over capacity because of certain inherent limitations. Our estimates of demand are for automobiles only excluding motor cycles etc. The ancillaries are also used in motor-cycles. scooters. mopeds, tractors, road rollers, stationary engines and compressors of various types. Further, the figures of licensed capacity given in the statement do not cover the small scale sector which plays an important part in meeting the replacement demand of ancillaries and also, in some cases, in meeting the original equipment requirements of some of the automobile manufacturers.

TABLE 14

Comparison of likely short-fall or excess of licensed capacity by 1969-70

(In thousand nos.)

Sl. No,	Name of part	Estimate of demand	Capacity licensed	Short-fall (—) or excess (+)
1	2	3	4	5
1	Piston assemblies . .	1832	..	..
2	Piston rings . .	20466	16500	(—)3966
3	Carburettors . .	56	231	(+)175
4	Valves (Engine Valves) .	5144	5600	(+)456
5	Valve springs . .	3080	..	..
6	Tappets . . .	1016	300	(—)716
7	Fuel filter elements	2635	..	..
8	Air cleaner elements .			
9	Oil filer elements .			
10	Fuel pump diaphragms	418	100	(—)318
11	Complete water pump replacement kits . .	534	..	..
12	Radiator cores . .	275	70	..
13	Radiator tanks . .	100		
14	Gaskets (sets) . .	1150	..	..
15	Thinwall bearing (sets)·	450	1720	(+)1270
16	Fan belts . . .	1150	..	..

TABLE 14—(*Contd.*)

1	2	3	4	5
17	Fly wheel ring gears	540	272	(—)268
18	Shock absorbers	3152	1443	(—)1709
19	Stearing gear assemblies	100	gears 70 wheels 55 } 125	(+)25
20	Tie rod ends	978	1528	(+)550
21	Brake hoses	1450	480	(—)970
22	Brake linings	1450	3190(tonnes)	..
23	Brake master cylinders	100	..	..
24	Clutch assemblies	100	152	(+)52
25	Fuel injection pump (multi-cylinders)	44	77	(+)33
26	Nozzle holders	642	574	(—)68
27	Nozzles	1776	2290	(+)514
28	Nozzle elements	1020	2188	(+)1168
29	Delivery valves	1020	1828	(+)808
30	Clutch disc linings	534	..	..
31	Universal joints	1524	1128	(—)396
32	Propeller shafts	164	200	(+)36
33	Wheels	608	625	(+)17
34	Starter motors	100	118	(+)18
35	Dynamos	100	175	(+)75
36	Ignition Coils	328	133	(—)195
37	Distributors	56	118	(+)62
38	Voltage regulators	489	263	(—)226
39	Spark plugs	2413	2760	(+)347
40	Electric horns	489	525	(+)36

CHAPTER IV

RAW MATERIALS

12. Raw Materials

12.1. The raw materials required by some typical ancillaries are as follows:

Name of the industry	*Raw materials required*
Piston Assembly . . .	Aluminium alloy ingots, big iron special alloy steel, steel strips, duaflex steel strips, circlip steel, copper, magnesium, silicon, nickel, phosphorous, etc.
Radiators . . .	Copper, brass, zinc, tin, lead, steel, etc.
Fuel Injection Equipment .	Bright drawn round and hexagonal bars, case hardening hot rolled mild steel bars, low carbon steel forgings, free cutting bright drawn brass bars, aluminium ingot, etc.
Dynamo and Starter Motors	Steel strips, coils and rods, copper wires, plate and strips, brass rods, phospher bronze wire etc.
Brake Assembly . .	Steel forgings, castings, deep drawing quality steel sheets, spring steel strips, spring steel wires, bright drawn bars, brass stampings, etc.
Wheels	Hot rolled sections, mild steel plates and sheets etc.
Leaf Springs . .	Silico manganese and chrome vanadium steel, mild steel flat bars, strips and plates, bushings etc.

12.2. In our Report on the Continuance of Protection to the Automobile Industry we had mentioned that according to an analysis made in 1958, in connection with hearings before the Senate in U.S.A. an administered prices of automobiles, iron and steel constituted about 85 per cent by weight and 56.8 per cent by value of basic raw materials used in a passenger car. The other main items in descending order of percentages of Cost were as follows:

Paints and thinners	10.2%
Safety glass	10.0%
Non-ferrous metals etc.	7.1%
Rubber	5.3%
Cotton	4.9%
Woo	3.3%
Others items such as plastics, leather, wood, chemicals etc..	2.4%

In our Report referred to earlier we had estimated the value of raw materials required for the ancillary industries to be about 80% of the total requiremets of the automobile industry or about Rs. 27 crores. The Working Group for Transport Equipment (1963) estimated raw material requirement for ancillaries to be about 15 per cent of the output value of the automobile industry (Rs. 25.2 crores).

12.3. At the eighth annual general meeting of the A.I.A. A.I.A. held in New Delhi on December 22, 1967, its President observed "We have been getting adequate licences for import of tool, alloy and special steels and non-ferrous metals which constitute our principal imported raw materials". This should be taken to mean that at least the organised sector in not being starved of raw materials. Steel flat products are being permitted for import except for certain banned categories. The tool and alloy steels required by the ancillary industries are being imported. As regards aluminium, since the indigenous production is not adequate it is allowed to be imported. Other non-ferrous metals are also being imported since they are not available from indigenous sources. The D.G.T.D. has informed us that since 1964 there has not been any difficulty in meeting the requirements of raw materials as the necessary foreign exchange was being made available through special credits from the International Bank for Reconstruction and Development (IBRD). The IBRD credit did not, however, include some items like spring steel, lead and rubber required for springs, battery and tyres.

12.4. During the public inquiry, as well as in their written evidence many producers of automobile ancillaries complained about the inadequate supply of the requisite raw materials. One manufacturer of piston assembly has stated that the supplies of pig iron by Hindustan Steel are very erratic, while according to another producer there is an acute shortage of aluminium. A third producer has represented that alloy manufacturers are unable to commit themselves to any guaranteed supplies because supplies of virgin ingots as also the imported alloying elements are very uncertain. One unit manufacturing brake assembly has stated that it has been experiencing difficulty with regard to procurement of raw materials, components and consumable stores from indigenous sources as their prices are too high, availability is scarce, quality is not always upto the mark, and delivery takes a long time. The firm added that it had not been able to obtain full delivery of some 192 tons of cold rolled sheets even though its application was made as early as 1962. One manufacturer of leaf springs has commented that the main difficulty about the availability of raw material arises when import licences are not granted to it in time and in adequate value to cover its full requirements. Another manufacturer has said that import licences are issued for specific payment areas which make it difficult to import the required sizes. One producer reported that once he got an import licence for diaphragm steel from a rupee area and second time from the U.S.A. which affected the quality of his product. He suggested that—uniform type of diaphragm steel should be made available to him. As for imported materials, some producers have observed that the supply is governed by availability of licences issued and lead time available.

12.5. Many manufacturers who replied to our questionnaire have referred to the unsatisfactory quality of indigenous raw materials. A producer of piston assembly has observed that supply of pig iron is extremely unsatisfactory and moreover on chemical analysis it does not conform to the specifications called for. A diesel fuel injection equipment producer has observed that even in the case of well-established indigenous suppliers who have supplied goods for a long time, a sudden and inexplicable deterioration in quality frequently takes place. The unit imports black bars from overseas and hands them over to bright steel drawers in India. There were occasions when it found that bright bars were unusable because of cracks. A producer of leaf springs has stated that only lower qualities of patented spring steel wires in limited ranges are available which are often not as per standard.

12.6. Many producers have also commented about high prices of raw materials. Some piston assembly units have put in a plea against recent increases in the prices of pure aluminium and pig iron. A manufacturer of fuel injection equipment has stated that many suppliers of indigenous raw materials have demanded higher prices specially after the devaluation of Rupee. Another unit making dynamos and starter motors has stated that indigenous cost of copper works out 30 per cent more than the landed cost of imports, while indigenous cost of ordinary ENIA steel in bright drawn condition is 20 to 25% more than the landed cost of similar items.

12.7. In our Report on the Continuance of Protection to the Automobile Industry, we have discussed in detail the present and future availability of indigenous alloy steel. The Alloy Steel Plant, Durgapur has informed us that its main line of production is structural steel while the Mysore Iron and Steel Co. has not finalised the specifications of steel to be manufactured by it. Further, Guest, Keen and Williams Ltd., has commenced production of the forging quality alloy steel required by the automobile industry. Its past production of special steels for outside sale was virtually confined to spring steels. Its licensed capacity is for the production of 45,000 tonnes per annum of free-cutting steels and spring steels including certain high carbon and alloy steel and for rolling bars and rods to the extent of 135,000 tonnes per annum. Firth Sterling Steel Co. has informed us that it has a capacity of 600 tonnes per annum for cold drawn centreless ground rounds in alloy steel suitable for the automobile industry. However, its activity will be confined to rolling bars made by other primary producers. Mahindra Ugine Steel Co., is also reported to be in a position to supply alloy steel of various categories that is required by the automobile industry. It has started rolling alloy steel and by next year it will be in a position to supply products rolled from indigenous billets. However, as stated in our automobile protection report, we feel that it will be quite some time before the indigenous manufacturers have the capacity and capability to meet the requirements of the automobile industry and till then they will have to be met by imports.

12.8. According to the A.I.A.A.I.A. the question of substitution of scarce materials like copper and zinc by indigenous materials has been engaging the attention of ancillary manufacturers as well as some research institutions. In this context it has stated that the manufacturers of gaskets have adopted special type of gaskets to reduce consumption of copper. The substitution of aluminium-tin for both white metal and copper lead has been successfully tried out in the manufacture of thin-walled bearings. The Association has also informed us that the National Metallurgical Laboratory has developed a process for aluminising steel and the Central Mechanical Engineering Research Institute, Durgapur, has on its programme a project for the replacement of copper by aluminium in the manufacture of radiators. Since the manufacturers of ancillaries are not free to decide the question of substitution without the approval of motor vehicle manufacturers, the All India Automobile and Ancillary Industries Association and Association of Indian Automobile Manufacturers jointly appointed a Technical Cell in October 1965 to examine the scope for the substitution of imported components as well as raw materials for the automobile and ancillary industries. Since steel is the main item of imported raw materials for the automobile industry, the Technical Cell gave it prior consideration. The Cell has finalised the rationalised list of wrought steel requirements for automobile and ancillary industries and is to take up next the question of rationalisation of flat steel products including rolled sections. The substitution of scarce metals such as copper, tin, lead etc. required for the automobile components is likely to be taken up later on. We have been informed that the Cell would function permanently thereafter and advise the various manufacturing units regarding substitution of imported raw materials for finished components. We have given in Appendix XV details of progress of import substitution in the Ancillary industry, based on a study made by us for a few units in connection with this inquiry.

12.9. We understand from the A.I.A.A.I.A. that its Leaf Springs Panel had negotiated the purchase of bulk raw materials for the entire industry at an economical price. It has further observed that since there is considerable scope for bulk purchase of copper and brass strips (for radiators) and tubing (for shock absorbers), this method of bulk purchase could be emulated by other panels also. ....Such bulk purchase would naturally mean lower purchase prices and conservation of scarce foreign exchange for import of raw materials. It is, therefore, desirable that producers of such items should also go in for bulk purchases for their own benefit as well as that of the country.

12.10. There should be also co-operation between automobile ancillary industry and the machine tool industry so that most of the requirements of machine tools can be made available indigenously. The future growth of the automobile industry depends upon the growth of both machine tool industry and steel industry.

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CHAPTER V

QUALITY STANDARDS, RESEARCH AND TRAINING SCHEMES

13. Quality

13.1. A vehicle is made up of components and parts some of which are made by the automobile manufacturers, some are brought out from ancillary manufacturers and a few imported. Its quality and performance with particular emphasis on safety are the joint responsibility of the vehicle manufacturer and ancillary producers. While a vehicle manufacturer is normally inclined to restrict this production of components to his own requirements, an ancillary manufacturer undertakes the production of components for various makes and models both for original equipment and replacement. Some of the automobile manufacturers have argued that the reputation and performance of their vehicles is being endangered by the relatively poor performance of certain components obtained from the ancillary industry. On the other hand, the ancillary industry has pleaded that it is required to supply components and parts to the vehicle manufacturers in accordance with the specifications and drawings submitted by the latter. Further some of the dealers have observed that the automobile manufacturers have not been exercising rigid quality control and making thorough tests at their end, whether the complaints related to defective assembly process or non-standard quality of parts either bought-out or manufactured by the automobile producers themselves. In our Report on the Continuance of Protection to the Automobile Industry, we have observed that it is the responsibility of the automobile maufacturer to ensure that the parts used meet his specifications. This, however, does not absolve the ancillary manufacturers of their responsibility in ensuring a uniform and acceptable standard of quality.

13.2. Most of the ancillary manufacturers in the organised sector have collaboration agreements and their products are expected to conform to the quality standards laid down by their collaborators. As every small unit cannot afford to have all the necessary costly equipment to test their quality their Association should take the necessary measures to help such units.

13.3. Views of vehicle manufacturers, dealers and others were sought in regard to quality. The Federation of All India Automobile Spare Parts Dealers Association is of the opinion that though most of the components and parts manufactured indigenously are under foreign technical collaboration, some of them are not rigidly tested leaving much to be desired. Premier Automobiles and Standard Motors are generally satisfied with the products supplied by the ancillary sector. Ashok Leyland is of the view that quality is being compromised by some of the ancillary manufacturers owing to scarcity of certain raw materials. Hindustan Motors and TELCO consider that there is scope for improvement in many ancillary items. Simpson and Co. purchases only products which conform to its specifications. The D.G.T.D. stated that purchasers of vehicles have complained of the defects they have found in certain vehicle parts. Some of the delears have individually put forth the view that (i) quality of indigenous ancillaries is not generally comparable to that of the imported counterparts, (ii) some parts in particular are poor in performance necessitating frequent replacements, and (iii) due to abnormally high market demand for spare parts, the manufacturers care for production more in terms of quantity than quality.

13.4. Alongside the organised ancillary sector, there are a large number of small scale manufacturers in the country who make parts both for supply as O.E. and for the replacement market. According to the Development Commissioner, Small Scale Industries, the small units generally possess testing euipment such as gauges and tools to ensure that the quality of the goods supplied by them to the large scale units is acceptable. They also avail themselves of such facilities from outside. The small Industries Service Institutes have been providing technical assistance and common facility services to the units, wherever and whenever possible. The units generally manufacture parts according to the specifications and drawings supplied by the large scale units who, in turn, follow the specifications of their collaborators or principals. The O.E. suppliers are, therefore, in a more fortunate position as they have access to the drawings and specifications but the position of those who cater only to the replacement demand is different.

13.5. From the replies received we have found that some small scale units have facilities for testing products for maintaining quality. For instance, a small scale producer in Bombay manufacturing items like ash tray, tail lamps, sealed beams reflectors claims to have his own testing facilities and also experienced hands to test his products at every stage. Another Bombay unit which manufactures machined components in all specifications, metals and standards, including bolts, studs, pins etc. for all types of vehicles, stated that it has up-to-date imported testing instruments and gauges to control quality during production and also before packing. A unit situated in Delhi engaged in the production of filtration equipment and auto parts claims to have installed a testing rig to test their performance. A unit in Lucknow which is producing items like silencer and tubes, switch keys, hand brake and clutch levers has reportedly arranged to get products tested under the supervision of a German trained and qualified technical engineer. A Hyderabad unit which produces electrical windscreen wiper motor for trucks, buses, jeeps, etc. possesses a fully equipped test bench with metres and multi-metres and attachments as per British Standard Specification.

13.6. Quality Control

13.6.1. The ancillary manufacturers were asked through our questionnaire to outline the action taken by them to maintain proper quality control. Some of them have reported to us the methods adopted by them in regard to inspection and quality control at the raw material stage as well as at the stage of the finished product. Particulars furnished by some manufacturers of important ancillaries are given below :—

TABLE 15

Quality control methods adopted by some ancillary manufacturers

Name of the Unit	Quality contorl Methods	
	Raw materials	Finished products
1	2	3
	I. Clutch Assembly	
1. Luk Auto Ancillary (India) Ltd., New Delhi.	..	They have quality control cell and their inspecting engineers check and scrutinise the quality at every stage.
2. Rane (Madras) Ltd., Madras.	For prime raw materials both imported and indigenous they insist on test certificates from the manufacturers covering chemical composition and physical properties.	They have a well organised inspection department. The hubs are checked 100% for spline details and hardness. The spring plates are checked for hardness and dimensional details of perforation on a percentage basis. The sub-assemblies are individually inspected for cork rivetting. The complete assembly is checked for thickness and run out with special gauges. Further, for specialised metallurgical tests they take the assistance of private Analytical Laboratories or Institution like Indian Institute of Technology, Madras.

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TABLE 15—(*Contd.*)

1	2	3
3. India Pistons Repco Ltd., Madras.	Testing facilities available at India Pistons.	They have rigid stage inspection with precision appliances such as Micrometers, Bore gauges, Hardness Tester, Gear tooth vernier etc. Final inspection is also maintained to check the specifications.
	II. Radiators	
4. Teksons Pvt. Ltd., Bombay.	Testing raw materials at the recognised laboratories in Bombay.	They have quality control department and full installed facilities to cover research design and development of the product manufactured.
5. Union Company (Accessories), Madras.	Testing facilities are available at the Government Laboratory, Madras.	..
6. Universal Radiators, Coimbatore.	..	Stage inspection on the assembly.
7. Bharat Radiators Pvt. Ltd., Bombay.	..	Radiators are inspected for (1) Leakage tests (2) Dimensional check (3) Fabrication tests (4) Water flow tests (5) Solder joint tests (6) Tube blockage tests

TABLE 15—(*Contd.*)

1	2	3
	III. Carburettors and Fuel Pumps	
8. Carburettors Ltd., Madras.	Raw materials are subjected to visual checks for defects, dimensional checks.	They have incoming, in-process and outgoing quality control. Products are tested 100% before they are despatched.
9. Inspi Auto Industries Pvt., Ltd., New Delhi.	They have facilities for testing their raw materials and finished products.	..
	IV. Fuel Injection Equipment	
10. Motor Industries Co. Ltd., Bangalore	Floor inspection at prescribed intervals for various processes, Benchinspection, double random sampling generally adopted. 100% check for functionally important components. Periodic inspection checks of important tools, gauges, measuring instruments etc. All raw materials inspected for their conformity at well equipped chemical, metallurgical and physical laboratories.	Final products checked 100% for function, assembly dimensions and visual properties according to specifications as laid down by their Associates, Bosch. In addition, quality tests which include endurance tests, destructive tests, and tests under odd conditions (climatic and stress conditions). Scrap and repair statistics are maintained for remedial actions. The S.Q. C. Department watches all the manufacturing processes.
11. Fuel Injections Ltd., Bombay.	Inspection at all stages of manufacture and 100% inspection at critical stages including final inspection.	Facilities available for testing finished products.

TABLE 15—(*Contd.*)

1	2	3
12. K. S. Diesels Pvt. Ltd., Bombay.	Following tests are carried out : (1) Pressure test (2) Comprex test (3) 2nd inspection Microscopic test (4) Pressure test	..
	V. Dynamos and Starter Motors	
13. Globe Auto Electricals, Bombay.	Incoming, semi and finished parts inspected for dimensions hardness.	100% test as laid down by collaborators. Samples sent to collaborators and facilities availed of at Victoria Jubilee Technical Institute (V.J.T.I.,) Italab, National Test House, Alipore.
14. Best & Co., Madras.	Inspection of incoming raw materials and components.	Inspection of finished components and testing the finished products before despatch. They also have metallurgical laboratory attached to their foundry and a Development Section.
15. Lucas TVS Ltd., Madras.	Raw materials are inspected for diamensional accuracies and compliance with the material specifications.	Quality control methods are applied in the following 4 main stages assisted by metallurgical and chemical laboratories. (1) Vendor quality goods inward inspection. (2) Manufacturing and sub-assembly. (3) Assembly and various processes. (4) Warehouse inspection.

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TABLE 15—(*Contd.*)

1	2	3
	VI. Propeller Shafts	
16. Ex-Cell-O India Ltd., Bombay.	Inspection of raw materiaals, testing of hardness and accuracy. Complete line inspection of each manufacturing centre.	Extensive try out of parts before they are accepted by customers. Products tested from outside laboratories.
	VII. Brake Assembly	
17. Brakes India Ltd., Madras.	Random sampling including dimensional and metallurgical checks and 100% visual examination of hydraulic internal parts.	100% visual examination of all brake units and pneumatic check if hydraulic type and full metallurgical and chemical laboratory facilities availed of at Lucas TVS Ltd.
18. Automobile Products of India Ltd., Bombay.	Carbon content testing, hardness testing, tensile testing etc.	Tests such as balancing, pressure testing, dynamometer testing etc. are carried out and the testing facilities available at M/s. Italab, V.J.T.I., etc.
	VIII. Wheel Assemblies	
19. Sankey Wheels Ltd., Durgapur.	Comprehensive inspection is carried out at each stage of production. Facilities for testing raw materials and finished products available at works and at C.M.E.R.I. Durgapur.	..

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TABLE 15—(*Concld.*)

1	2	3	4
20.	Wheels India Ltd., Madras.	Every component coming out of the production line on initial production is checked. Frequent checks are carried out by patrol inspectors to ensure quality. Imported materials examined physically and metallurgically by the collaborators before despatch. Steel plates, steel sheets purchased from H. S. L. are certified at source before despatch.	Inspected components are assembled together and checked for specification on fixtures before despatch. Finished products are occasionally forwarded to our collaborators for destructive testing and report.
		IX. Glass Items	
21.	Hindustan Safety Glass Works Pvt. Ltd., Calcutta.	..	They have laboratory and testing apparatus and there are technical staff for the purpose.
		X. Panel Instruments	
22.	International Instruments Pvt. Ltd., Bangalore.	Incoming inspection for all raw materials purchased.	In the assembly line, they have stage inspections, that is, sub-assembly inspections and final inspection on the line.

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13.6.2. It should be remembered that Statistical Quality Control techniques if properly applied can result not only in improving quality but in raising productivity. Increased productivity would mean increase in output for a given unit of input with a simultaneous reduction in cost. This would result in increased production, lower costs, lower prices and less burden to the consumer. It is, therefore, desirable that all automobile ancillary units should introduce quality control. In this connection, we are glad to note that the A.I.A.A.I.A. has instituted a National award for quality control. This should encourage quality control consciousness in ancillary units.

14. Standards

14.1. The Indian Standards Institution has taken up the work of preparing standard specifications for a number of materials and processes and components. The preset position in this regard is as follows:—

	Standards published	Standards under preparation	Standards on programmes of formulation
(i) Structural and metals			
(a) Ferrous . .	51	8	..
(b) Non-ferrous . .	32	3	3
(c) Weldings . .	11	2	..
(ii) Mechanicals and components.	25	18	42
(iii) Electrical . . .	19	10	15
(iv) Chemicals (Lubricants, fuel)	15	2	2

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A complete list of Indian Standards Specifications formulated and those under preparation is given in Appendix XVI. We have pointed out in our Report on the Continuance of Protection to the Automobile Industry that the progress of implementation of Indian Standard Specifications by the industry is comparatively slow for this reason as well as the difficulty in the procurement of materials of standard quality.

14.2. Standardization and simplification of product design.—The A.I.A.A.I.A. has observed that one of the major problems confronting the automobile ancillary industry in India is the wide variety of sizes, types and shapes of various components of the different makes and models of vehicles, all of which function more or less identically. It has observed that there are many such components which are common to most vehicles and there is no conceivable reason why their design, size, shape, etc. should differ from one another. The standardisation of these items, their fittings and mountings, will make it possible to interchange these parts on different makes and models of vehicles which results in greater volume and volume production will tend to lower costs and prices. It will also make for economy in spare parts maintenance by the fleet owners. The A.I.A.A.I.A. is of the view that in most advanced countries, the problem of standardisation has been successfully tackled in spite of the very large multiplicity of makes and models. There is no reason why in this country where the vehicles of different makes and models are far fewer, a beginning cannot be made with at least non-functional components. It has given a list of such components which we have reproduced in Appendix XVII. We recommend that the Sectional Committee of the Indian Standards Institution dealing with Automobile vehicles may look into the question of standardising some non-functional parts of automobile also.

15. Research and Development

15.1. Out of 91 ancillary manufacturers who replied to our questionnaire, 23 have stated that they have research and development programmes. For example Automobile Products of India has a Design and Product Engineering Department. Another unit viz. Brakes India claims to have designed a range of hydraulically and manually operated brakes from 8″ to 11″ in diameter. Sundaram Clayton maintains a Research and Development Department which is responsible for development, testing and the endurance testing of any unit both of standard or proto-type nature, and facilities exist within this department for testing of all braking units for the equivalent of one million emergency operations of brakes. It has stated that it maintains a Technical Design and Engineering Department which deals with all questions of design, and modifications. Original design work is also reported to have been undertaken for special installations such as defence vehicles, railway vehicles and trailers. As research cannot be undertaktn by small scale units, A.I.A.A. I.A. should take an initiative in this respect.

15.2. The Central Mechanical Engineering Research Institute at Durgapur has set up test rigs for a few ancillary items. We are informed that the Institute has plans for the expansion of its automobile division. The Indian Institute of Science, Bangalore, the National Test House, Alipore and the National Metallurgical Laboratory, Jamshedpur are the other institutions where testing and research facilities are available. A number of ancillary manufacturers are utilising the facilities available with these institutions to test basic raw materials and finished components and to design and develop new components. The National Metallurgical Laboratory does not undertake routine testing but conducts investigations of a specialised nature. Premier Automobiles has approached it for testing as well as for some developmental work for its automobile parts. The Laboratory has aluminised a number of mufflers and silencer parts for Indian Army vehicles. For a fuller utilisation of facilities at these institutes, greater coordination should be established between the Institutes and the automobile and ancillary manufacturers as recommended in our Report on the Continuance of Protection to the Automobile Industry.

15.3. It is necessary that the industry should also have all facilities to test components manufactured in India under different operating conditions for safety, performance, and efficiency. Product design and engineering which is most essential for the growth of the ancillary industry has been neglected. This requires to be developed as early as possible.

16. Training Schemes

Some of the ancillary manufacturers have collaboration agreements with foreign manufacturers containing provisions for giving technical training to Indian personnel. For example, the collaborators of Sundaram Clayton Ltd., Madras give training to the representatives of the company in their factories and laboratories. In the case of Escorts Ltd., New Delhi, the German Partner trains Indian engineers in its factory, foundry and laboratory for periods ranging from six to twelve months. The company also loans the services of its engineers for installing machinery, training Indian personnel and supervising production of pistons. The technical personnel of Brakes India Ltd., Madras are given training by the collaborators in their factories. Prestolite of India Ltd., is in collaboration with Eltra Corporation (Division of Prestolite International Co.) U.S.A. The collaborators train at their factory in U.S.A. engineers in the employment of the Indian company, at its own expenses for such training. India Pistons Ltd., Madras has a Technical Aid Agreement with Associated Engineering Holdings Ltd., U.K. Under this agreement, the foreign company sends, to India as per prescribed number of times or period the following classes of specialists for the purpose of instruction:—

(i) An Engineer or Draughtsman well-acquainted with machine Shop processes, and

(ii) An Engineer or Draughtsman well-acquainted with foundry processes.

India Pistons—Repco Ltd., Madras has a Technical Aid Agreement with Repco Ltd., Australia. In terms of the Agreement, the Indian company deputes not more than two technicians to the factory of the licensor (foreign company) in Melbourne, Australia for training in the manufacturing processes for a period not exceeding of 6 months. Further the licensor, if requested by the Indian company, arranges for a senior technician from its staff to visit the factory of the licensee in India who assists and trains the staff of the Indian company in the manufacturing processes for a period not exceeding 6 months. In the case of Shardlow (India) Ltd., who is in collaboration with Ambrose Shardlow and Co. Ltd., U.K., the foreign company trains the selected technicians of the Indian company at the works of the former in England in the processes and techniques currently employed at those works in the production and heat-treatment of drop stampings and dies. Further, the technicians of the foreign company impart training in India to the personnel of the Indian company. whenever required. The collaborators of Ex-Cell-O India Ltd. permits the employees of the latter to receive training in the techniques and processes used in the manufacture of the products of the former. In respect of Kirloskar Oil Engines Ltd., the foreign company receives Indian technicians and supplies to them technical information by means of oral instructions temporary supervision, advice, etc. Fuel Injection Ltd. has a technical collaboration agreement with

Bryce Berger Ltd. England which provides, *inter alia,* for employment of technicians from Bryce in India and also deputing Indian engineers for practical training at their works. Ennore Foundries Ltd., is in collaboration with Leyland Motors Ltd., U.K. which provides the services of necessary technical personnel. International Instruments Pvt. Ltd., is in collaboration with VDO Tachometer Werke, West Germany which lends the services of the required technicians for erection, production and training of Indian personnel in India for a specified period. Goetze (India) Ltd. has a collaboration agreement with Gotzewerke Friedrich Goetze A.G., West Germany, which supplies technical knowledge and arranges to instruct and advice at its factory the required number of experts and technicians sent by the Indian company for training. Wheels India Ltd. is in technical collaboration with Dunlop Rim and Wheel Co. Ltd., U.K. for training technicians in Coventry and in Madras.

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CHAPTER VI

SELLING SYSTEM AND SELLING PRICES

17. Selling system

17.1. There are more than 230 manufacturing units on the books of the D.G.T.D. producing ancillary items in the country of which 91 have replied to our questionnaire. Each unit has its own arrangements for marketing its products. Most of the producers sell directly to vehicle manufacturers as O.E. at negotiated prices. The replacement market is served through the distribution channel consisting of sole selling agents, distributors, dealers, stockists and retailers. Sales to State Transport Undertakings and other Government bodies are generally done directly. The discounts/commission allowed to sole selling agents, distributors, etc. vary from nearly 10% to 40% depending on the tiers in the distribution channel. Some manufacturers also give bonus for off-take over and above the fixed targets.

17.2. In the present inquiry, we are concerned with ancillaries mainly for use as O.E. and not as spares. During the course of our investigations we have received complaints that there are shortages of parts, more so in smaller towns and in the interior. Yet another complaint was that while some spares were freely available there were other essential maintenance items which were always in short supply. All this has been attributed to faulty distribution and lack of regular and even flow of parts from the manufacturers to the distributors and dealers and from them to retail outlets. It is stated that most of the ancillary industries have a system of appointing dealers and distributors who do not carry regular stocks and fail to ensure supplies at fixed prices, and that the stocks find their way into other retailers' shops and by the time the products have changed hands a number of times the prices at which these are available to users naturally become much higher.

17.3. One of the dealers' associations has informed us that some of the ancillary manufacturers have very rigid terms and conditions in their agreements with the distributors or dealers. They not only require large security deposits from their distributors but also compel them to guarantee a large off-take for their products. These terms and conditions differ from manufacturer to manufacturer which complicate matters for the spare parts trade. Further, it was brought to our notice that in order to cater to the replacement needs, a dealer has to carry large stocks of fast and slow moving parts. The element of deadstock is very considerable and this risk has to be taken by spare parts dealers. Every year the risk of obsolescence increases and a good portion of spares has to be scrapped. This partly explains why supplies of parts in mofussil are not satisfactory, as in a short time many of the parts become obsolete and the costs have to be partially or wholly written off. It is, therefore, felt by the trade that the discount allowed by ancillary manufacturers is too small.

17.4. The problem of shortages could be solved only with an increase in the volume of production. In the meantime, we would suggest that the ancillary manufacturers should explore the possibility of making the net-work of distribution and service facilities more efficient and also ensure regular flow of parts to the replacement market.

17.5. **Trade in spurious parts**

17.5.1. During our public inquiry some ancillary manufacturers and also trade representatives stated that the demand estimates of automobile ancillary items might go wrong unless something was done to check the dealings in spurious parts. Such items are scattered all over the country. The dealers of such items are subject neither to any standards of quality nor other restrictions. Thus they cause quite some damage to the genuine replacement market, taking advantage of the shortages and the consequent high prices. It would appear, they obtain the discarded parts like gaskets and bearings disposed of as scrap. Even armature and clutches do not escape their eyes. They recondition them most attractively. They paint them nicely, superimpose some fictitious brand name or cleverly use the most popular brand names and pack these in a manner identical with the original but sell it at lower prices. It is true that even in countries like the U.S.A. the practice of reconditioning old items is prevalent, but it is clearly mentioned on the containers that the stuff has been rebuilt.

17.5.2. For effectively dealing with the problem of spurious parts, legal action has been suggested; in other words, some arrangement similar to that under which export goods are inspected and certified by the Export Inspection Council should be made for locally sold products also. Moreover, State undertakings and Government Departments which are important bulk buyers of spare parts, may in the public interest. have to purchase from authorised dealers only. We may add that there is a responsibility on the shoulders of other consumers as well in that they should be more discriminate in their purchases and not be guided by the price factor alone. There is yet another way in which the spread of spurious parts can be checked. If makers of functional parts like armature, gaskets, castings, cylinder heads and bearings can also arrange to get back the old used ones, spurious manufacturers can be prevented from passing substandard goods as genuine. In fact, even now it appears that a company making batteries generally asks customers to return old batteries when purchasing new ones.

17.5.3. Some consumers have pointed out that the popularity of spurious parts is due more to the lack of proper distribution arrangements for genuine parts made by ancillary manufacturers. Manufacturers have a great responsibility in this matter. They should see to it that vehicle owners and makers are not put to difficulty in obtaining spare parts owing to want of distribution agencies in accessible places. Manufacturers in their own interest should give wide publicity to the location of their dealers and also circulate their price lists more liberally than now. Spare parts dealers can play a significant role in checking the spurious trade by being doubly careful in their dealings.

18. Warranties

Some of the manufacturers have informed us that they give warranty for their products. The period of warranty varies from company to company. For instance, two of the manufacturers of wind screen wipers give warranty of one year while another gives a warranty for six months only. Similarly, the warranty offered by a manufacturer of electrical items is one year while in the case of another it is six months. The warranty cost to manufacturers appears to be small or negligible. One of the units costed by us has indicated that the cost of warranty during the last five years was 5 per cent of turnover on an average while two others have informed us that the cost was negligible. It would be desirable if the ancillary manufacturers print the warranty on every package in their own interest as it would create confidence in the consumers regarding the genuineness of the product.

19. Selling Prices

19.1. The prices of ancillary products are to be viewed from two different angles, O.E. prices and replacement prices. For fast moving parts, it is the common practice to keep O.E. prices low and have a higher margin on replacement sales. The prices of O.E. supplies are normally negotiated between the automobile manufacturers and the ancillary manufacturers. The need for such free and unfettered negotiation, which is stated to have several advantages, was recognised by Government as far back as 1961. The Jha Committee on Automobiles which considered the question of O.E. prices made a distinction between components which had good replacement demand and those which had not. It had made a general recommendation that the ancillary industry should be able to supply components at a price which did not exceed the c.i.f. price of similar imported components by more than 40%. Government accepted this recommendation in 1960. Government also accepted the recommendation of the Development Council for Automobiles, Automobile Ancillary Industries and Transport Vehicle Industries on the question of pricing of imported as well as indigenously manufactured motor vehicle parts with effect from 1st May, 1962 which is given below:—

"I. *Imported parts:*

(a) There shall be the following three stages for the distribution of imported parts both fast and slow moving:—

(i) The importer.

(ii) Regional Distributor or the wholesale parts stockists.

(iii) The Sub-dealer or the Retailer.

(b) (i) The mark-up of 70 per cent at present allowed over the landed cost in respect of fast moving parts shall continue.

(ii) In respect of the slow moving parts, the list price to the Consumer shall not exceed 100 per cent over the landed cost of that part.

(c) The price lists shall be prominently displayed at all places where spare parts are sold.

The vehicle manufacturers are requested to take suitable action against such of their dealers who default from complying with the manufacturers' directives.

II. *Indigenously manufactured parts:*

(a) For the distribution of parts and components manufactured indigenously there shall be the following stages :—

(i) The producer.

(ii) The Regional Distributor or the wholesale parts stockist.

(iii) The Sub-dealer or the Retailer.

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(iv) The automobile manufacturers who, it is recognised, have an important responsibility for supplying parts to their vehicles shall also be considered as an important stage for the distribution of indigenously manufactured parts.

(v) The above pattern of distribution may be deviated from in the case of such fleet operators who are eligible for actual users', consumers' licence and certain special parties, if they can directly negotiate with the manufacturers for certain concessions and obtain such direct supplies.

(b) (i) The list price to the consumer of the parts manufactured by indigenous ancillary industry shall not exceed:

70% or 100% above the landed cost of that product depending on whether it is a fast moving or a slow moving part. (The landed cost for the purpose will be determined on the imported spare parts price of the original manufacturer of that part). Where the indigenous manufacturer is unable to supply the parts within the price stipulated above he shall have to get the price approved by Government.

(ii) As for original equipment, the ancillary manufacturer shall be free to negotiate the price with the vehicle manufacturers.

(iii) The above price formula shall be applicable to parts manufactured by the vehicle manufacturers as well.

(iv) The distribution of the discount to the different stages of distribution is left to the manufacturers to decide amongst themselves and their dealers."

19.2. Frequent changes in the rates of customs duty created difficulties in arriving at landed cost. Government, therefore, by their letter dated 8th August, 1966, revised the mark-up formula. The revised mark-up was fixed at 80% and 120% for fast moving and slow moving parts respectively based on the C.I.F. cost. In other words, the customs duty was not to be taken into account for the purpose of the mark-up. In their letter of 5th October, 1966 Government issued instructions as to the interpretation to be given to predevaluation and post-devaluation rates.

19.2.1. Subsequent to devaluation of the pound sterling it was represented that the formula is not fair to the consumer in so far as the indigenously manufactured parts are concerned, in as much as it gives an unintended price benefit of 57.5 per cent to the indigenous manufacturer, although there may be little or no imported content in these parts. This point was considered by Government and the method of calculation of mark-up was revised recently (*vide* Ministry of

Industrial Development and Company Affairs circular No. 1(90)/67-A.E.IND(I), dated 19th January, 1968) which is given below :—

	Imported part		Indigenous parts
	Fast moving	Slow moving	(both fast moving and slow moving)
C.I.F. cost :			
Pre-devaluation . .	100	100	100
Post-devaluation .	157.50	157.50	157.50 (c.i.f. cost of corresponding imported part).
Custom duty . .	78.75	78.75	..
Landed cost . .	236.25	236.25	..
Marking . . .	(80% on c.i.f.). = 126.00	(120% on c.i.f) = 189.00	(100% on c.i.f.)
List prices . . .	362.25	425.25	315.00
Dealer discount . .	76.07	89.30	66.15
Net price to the dealer	286.18	335.95	248.85

NOTE.—It will be seen from the above that while adding the mark up of 100% on the c.i.f. cost in case of indigenous parts, the unity element is not taken into account.

19.3. We had requested the ancillary manufacturers to furnish information about changes in selling prices to O.E. manufacturers and for replacement market during the last three years. The information received by us is given in Appendix XVIII. It will be seen from this Appendix that there has been an increase in the prices of practically all ancillaries: There are some exceptions such as multi-cylinder pumps, nozzles and nozzle holders where the prices have actually gone down. There are also instances where the increase is considerable. All the manufacturers have not furnished the prices since 1961 ; in fact many of them commenced production later. During this period the Rupee was devalued and those ancillaries which depend to a large extent on imported raw materials. semi-finished and finished parts had to increase their price to neutralise the effects of devaluation.

19.4. **Reasons for higher prices**

Complaints have been received that the increase in the prices of ancillaries for O.E. supplies during the last five years has been considerable and that the prices of indigenous ancillaries are higher than the landed costs of corresponding imported parts. Referring to these complaints the A.I.A.A.I.A. has stated that there is an element of truth in this but that the following off-setting factors also should be considered in this context.

(i) The ancillary manufacturers are alive to their obligation to match the imported price which they indeed do in respect of a large number of items. The ancillary items in respect of which it is not possible to match the landed cost are the exception rather than the rule.

(ii) Ancillary prices whether O.E. or replacement are regulated though not strictly controlled.

(iii) Price control on commercial vehicles has been lifted, and

(iv) Bought-out items account for not more than 20 to 25 per cent of the ex-factory prices of the vehicles and failure to match the imported price in respect of a few of them cannot have the effect of increasing the total price of the vehicles significantly.

19.5. We have discussed the problem of high prices with the representatives of the ancillary industry as well as consumers, dealers, etc. at various, stages of our inquiry. The industry's explanation for high prices is that, in the first place, the demand for O.E. components is very small, being limited to the number of vehicles produced in the country, and this small volume of O.E. demand is shared by two or three or even more ancillary manufacturers. The volume that each competing manufacturer gets is further reduced with the result that none of them is able to produce componnents economically and cheaply primarily because of the lack of volume. With regard to the replacement, the available volume is by no means large compared to foreign standards. An added disadvantage, according to the A.I.A.A.I.A. is that the available volume is not only shared by the large ancillary producers but by a number of small scale manufacturers also. This phenomenon will continue till such time as the automobile market in India expands substantially. Further, high cost of imported raw materials, lack of volume, multiplicity of makes and models changes in specifications of components, high tooling costs and their amortisation which tend to increase the costs.

19.6. Comparative selling prices of components sold by vehicle manufacturers and ancillary manufacturers

19.6.1. Another aspect to which our attention has been drawn is the high prices charged for ancillaries by the automobile manufacturers or by the dealers who retail them on their behalf. The following table compiled for a few items from the data available to us from the dealers shows the wide differences between prices charged by the automobile manufacturers and/or their dealers and those by the ancillary manufacturers for the same items. In the case of serial Nos. 1, 2, 8, 9, 10, 20, 22, 25 and 35, the difference is quite high.

19.6.2. It is not understood why such high prices should be charged by the automobile manufacturers and/or their **dealers. It appears that** the automobile manufacturers make substantial profits from the spare part business. This, however, not only increases maintenance cost of the vehicles but also affects the demand. We, therefore, recommend that automobile manufacturs should reduce the price they charge for the spare parts sold by them to the same level as those by the ancillary manufacturers.

TABLE 16

Statement showing the comparative retail prices of vehicle manufacturers and ancillary manufacturers for some component

Sl.No.	Description of component	Manufactured by Ancillary industry		As marketed by Automobile manufacturers.	
		Part No.	Retail price (Rs. P.	Part No.	Retail price (Rs. P.)
1	2	3	4	5	6
1	Piston sets with Pins & Rings	X12057v	679.50	3120300618	897.60
2	Main & C/Rod Bearings .	MS-285/86	190.00	0210330018	498.90
		CS-280/81		3120380010	..
		M-364/B-364	182.00	..	..
3	Engine Valve Set Inlet and Exhaust . .	1632/1665	108.00	3210530811	126.60
				3210530705	..
		2677/78	108.00	..	..
4	Gasketunit. complete .	2206299	52.00	..	54.00
5	Gasket CylinderHead .	2206200	11.00	3120162320	11.50
6	Flywheel Ring Gear . .	106	62.00	3120320105	70.60
7	Rear Axle Shaft . .	0811	82.00	3123573501	211.00
8	UniversalJoint Kit . .	F-322-2-17	60.00	3124101042	150.98
9	Tie Rod End . . .	QR-117	46.00	0003380129	100.70
10	Clutch plate . . .	DF-3011	112.00	0002505203	258.00
11	Clutch Facing . . .	10/MB/1	19.00	0002520110	20.08
12	M.C.KitW/O piston . .	..	10.94	..	12.40
13	W.C.Kit,front . . .	..	5.40	..	11.10
14	Brake lining, front, with rivets	MB/49/1	87.20	3214210310	92.80
15	Brake lining.rear with rivets	MB/48/1	101.55	3124232110	107.20
16	Piston with Pins and Rings .	10167xv	164.00	H3001890	189.20
17	Main and connecting Rod bearings.	CS 160/MS165	44.00	8G-22071/	44.00
		M242/B-244	44.00	8G2175	
18	Engine Valves . . .	2850/3253	51.36	IG-310/IG-2315	53.12
		248212483	51.36		
19	Flywheel Ring Gear .	105	34.00	H-3002748	39.60
20	Rear Axle Shaft . .	0605A	55.00	102218	90.10
21	Timing Chain . . .	D-67522	15.06	2H-4905	21.25
22	Clutch Plate . . .	45589/14	55.44	7H-7215	103.00
23	Brake lining set . .	H1/7/1	38.70	..	49.50
24	Pistons with pins and Rings .	10143X301	123.00	..	150.00
			148.40		
25	Main and C/R Bearing .	CS120/MS125	36.60	..	85.00
		M203/B203	36.50	..	..

TABLE 16—*Contd.*

1	2	3	4	5	6
26	Gasket Unit, complete .	2503799	22.00	—	24.00
27	Gasket, Cylinder Head .	25039700	6.00	..	8.50
28	U. J. Kit	K5-L4	35.00	..	45.00
29	Clutch Plate . . .	A 145589/80	46.18	..	59.00
30	Clutch Facing . . .	16/F1/1	7.70	..	14.31
31	Timing Chain . . .	DB 03462	17.00	—	18.00
32	Gasket unit set . . .	5802999	25.00	810585	26.00
33	Main and C/Rod Bearing set.	M172/B172	44.75	645162/A-7233	51.15
34	Engine Valve Set Inlet and Exhaust.	2325/2326	56.32	746421/010205	58.00
35	Clutch Plate . . .	DF-307	54.60	925697	114.00

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CHAPTER VII

FOREIGN TRADE

20.1. Import Control Policy

20. Import Control Policy and Imports

20.1.1. Licences for motor vehicle parts are issued under Serial Nos. 293, 295 and 297 of Part IV of the Import Trade Control Schedule. The current licensing policy for the period April 1968 to March 1969 is detailed in Appendix 26 of the Red Book.

20.1.2. Policy for Established Importers

Established importers are granted licences on the basis of a joint quota of past imports of all motor vehicle parts falling under Serial Nos. 293, 295 and 297 excluding items given in Part 'B' of List II of Appendix 26. Licences are issued on the basis of 12½ per cent quota as against 17 per cent in the previous licensing period, namely, April 1967 to March 1968.

20.1.3. Policy for Actual Users

Applications from State Transport Authorities and other fleet owners, owning a fleet of 25 vehicles or above, are considered for the import of permissible motor vehicle parts, motor cycles, scooters and auto-rickshaws and passenger cars meant for private use are not to be taken into consideration as a part of the fleet. Such applications are also considered from a Co-operative Society of transport operators with a total fleet of 25 vehicles or above. However, such societies should be duly registered with the State Registrar of Co-operative Societies. In the licensing period April 1967—March 1968 these bodies were issued licences on the basis of either 150 per cent of their best year's imports during any one year 1954-55, 1956-57 or Rs. 800 per petrol driven vehicle or Rs. 1,100 per diesel driven vehicle whichever was more.

The Appendix 26 of the Red Rook contains two lists. Licences issued for motor vehicle parts are not valid for import of items specified in List I. which contains 46 items. These are as follows :—

LIST I

Licences issued for motor vehicle parts falling under Sl. Nos. 293, 295 and 297 of Part IV are not valid for the import of the following items and component parts thereof :—

1. Bulb horns.
2. Fanbelts whose bottom width (i.e. on the inner diameter) is more than 0.250 inch.
3. Radiator hoses.
4. Hand and foot pump connection.
5. Rubber horn bulbs and air horns.
6. Rubber mats.
7. Grommet used with wind screen wiper.
8. Rubber buffers-doors.
9. Rubber connection for filler tube-petrol tank.
10. Air vent pipe rubber connection-petrol tank.
11. Rubber insulating washers for bolts connecting body and chassis.
12. Rubber connection-Air cleaner.
13. Rubber mounting for silencer.
14. Joint-washer-petrol filler tube with cap.
15. Rubber packing for battery clamping channel.
16. Sealing strips for traffcator boxes.
17. Sidle strip roof opening.
18. Strip steering column.
19. Wind shield wiper tubing.

20. Sleeve rear drain pipe.
21. Rear strip roof opening.
22. Mascots and motifs.
23. Ash trays.
24. Auto fans.
25. Car heaters, coolers and radios.
26. Real lights and parking lights exclusive of rear side lamp of motor cars.
27. Battery cable.
28. Luggage carrier
29. Rear view and mudguard mirrors.
30. Number plates.
31. Hand or foot tyre inflators. [Hand Inflator pumps which can be easily used for cycles with slight modification and change of nozzle will be treated as accessories of cycles (Sl. No. 301/IV) and cannot be imported against licences for Motor Spare parts.]
32. Frames of motor cycles, scooters and three wheelers.
33. Sun shade or sunvisor.
34. Wind screen glass excluding laminated curved safety glass cut to size and shape and toughened curved glass.
35. Licence holder.
36. Rubber beading.
37. Canvas beading.
38. Circlips, star washers and spring washers.

39. Seat cushions of all types, Kool cushions of all types, Hair-lock, Cushion covers of all types, materials cut to size or otherwise for kool and seat cushions and leather, leatherette, plastic or cloth for upholstery for all motor vehicles.

40. Cab bodies, bus bodies, station wagon bodies, truck bodies, steel cabs for lorries, pick-up bodies and panel bodies either complete or in parts.

41. Dynamo lighting sets (other than Dynamo used on Motor Cars, Commercial vehicles and Jeeps).

42. Shackles, shackle pins, 'U' bolts, centre bolts, circlip and pressure plates (i.e. those used on the leaf spring assembly but not those of clutch assembly).

43. Malleable iron brackets and shackles as well as cast iron shackles and brackets. The brackets here referred to are those fitted to chassis or chassis frames.

44. Muffler and tail pipes and extension thereof.

45. All kinds of lamps and lights.

46. Commutators and parts thereof.

Import of items mentioned in List II is allowed in the manner indicated below :—

(a) Import of items shown in Part 'A' of List II will be allowed to the extent of 25 per cent of the face value of the quota licence with a restriction that the import of any single item will not exceed 5 per cent of the face value of quota licence.

(b) Within the limit of 25 per cent for Part 'A' items, import of items shown in Part 'B' of List II will be allowed upto an aggregate value of 2½ per cent of the face value of quota licence subject to the condition that the import of any single item will not exceed 1/4 per cent of the face value of quota licence.

Items covered in List II are shown below :—

LIST II
PART 'A'

Sl. No.	Articles	Remarks
1	Cylinder liners	
2	Fuel injection equipment and component parts thereof.	
3	Piston assembly	
4	Thin-walled bearings . . .	The following types of bearings of thickness 3/16″ or below will be considered as thin walled bearing :- (i) bearings of cam shafts; (ii) bearings for connecting rods (small end and big end); and (iii) bearing for crank-shaft. *N.B.*—For deciding the total thickness of the thin-walled bearings, the thickness of the lining of metal (bearing metal) plus that of the shell will be taken into account.
5	Inlet and exhaust pappet valve, valve guides (sleeves), valve rotators, tappers, valve springs, valve seat inserts.	
6	Dash Board Instruments . . .	Dash board instruments comprise of ammeters, fuel indicators, speedometers, water and oil gauges, voltameter and temperature guage.

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LIST II—*Contd.*

1	2	3
7	Propeller shafts, universal joints and parts thereof.	
8	Brake parts : Master and Wheel cylinder and parts thereof excluding brake hose.	
9	Water pumps and components thereof.	Water pumps bearings imported separately *i.e.* bearings which are not integral with the shafts will not be taken into account for the purpose of calculation of quota.
10	Clutch assembly complete . .	Import of clutch facings and clutch plates will be permitted for imports only with complete clutch assemblies.
11	Parts of Tippling Gear	
12	Carburettor	
13	Tie rod ends and drag link ends	
14	Leaf springs and spring leaves	
15	Laminated curved safety or toughened curved glass cut to size and shape.	
16	Brake drums.	
17	Locks specially adopted for motor cars, commercial vehicles, jeeps, motor cycles and scooters.	
18	Body components (Sheet metal components only).	
19	Wheels and rims.	
20	Gears, sprockets and axle shafts.	
21	Steering Gears complete.	

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LIST II—*Contd.*

PART 'B'

Sl. No.	Articles	Remarks
1	Brake linings in any form.	
2	Clutch facings in any form.	
3	(a) Horn buttons and horn rings. (b) Horns and horn relays.	
4	Filter/cleaner assembly, air, fuel, or lubricating oil.	
5	Piston rings.	
6	Radiator assembly.	
7	Shock absorbers.	
8	Carbon brushes (all sorts).	
9	Spark plugs.	
10	Voltage regulator and parts thereof.	
11	Ignition coils and parts thereof.	
12	Tyre tube valves, valve cores, caps and parts thereof.	
13	Wind screen wiper arms and blades.	
14	Flasher units and parts thereof.	
15	Taxi/fare meters.	
16	Glow plugs, glow plug resistors, glow plug switches and glow plug controllers.	
17	Dynamo pulleys.	
18	Hub caps and wheel covers.	
19	Windscreen wiper motors and parts thereof.	
20	Carburettor kits.	
21	Fuel pump and fuel pump kits.	
22	Distributors and parts thereof.	

LIST II—*Contd.*

1	2	3
23	Generator /Dynamo/Alternator and parts thereof*.	
24	Starter motor and parts thereof.	
25	Gaskets.	
26	Cables for speedometers and taxi meters	Shaftings or inner cables in coils *i.e.*, in length (not cut to size) is not covered under this item.
27	Oilseals and grease retainers.	
28	Hose pipes with or without end-fittings including brake hose.	
29	Fly-wheel ring gears.	
30	King pins (King pin with or without thrust bearing and shims).	
31	Tachographs.	
32	Steering wheels.	
33	Tipping gear complete.	
34	Roller/Timing chains upto 5/8" pitch.	

Note—The items included in this list will also cover their spare parts.

*This includes dynamos used on motor cycles which are driven directly by the engine and not by rotation of motor in contact with tyre.

20.1.4. The quota licences issued for import of motor vehicle parts are also valid for import of the under-mentioned items upto the percentage indicated against each :—

(i) Ball bearings / Self aligning bearings/Roller and Taper Roller bearings of categories which are not banned .	3%
(ii) Bolts, nuts, screws, spacers and washers (except bi-metallic Thrust Washers)	1%
(iii) Garage tools detailed in Appendix 25 (of Red Book) and parts thereof	4%

20.1.5. Licences for Sl. Nos. 293, 295 and 297/IV are not valid for the import of (i) motor cycle dynamo sets and (ii) cycle dynamo lamps i.e., dynamo lamps worked by the rotation of motor in contact with tyre.

20.1.6. Quota licences for motor vehicle parts are valid for the import of spare parts of auto rickshwas which are inter-changeable with motor cycles and scooters and are otherwise allowed to be imported against such licences.

20.1.7. In the context of import control policy we understand from the A.I.A.A.I.A. that Government has recognised in principle that imports of finished ancillaries must be restricted, if not banned for items the manufacture of which is firmly established in India. We understand that the difficulty appears to be that the majority of the importers utilise such licences for importation of ancillaries for the popular types which are currently in production in India, while the spirit behind the restricted import licences is mainly to cater to the spare part requirements for models not currently manufactured in our country or the items for which the production is not adequately established indigenously. Suggestions have been made by the trade to check this practice viz. listing the models for which items have been banned and seeing that the imports are directly sold to consumers who own such models. But such measures are not likely to be practicable as it is extremely difficult for the customs department to identify each and every ancillary items and co-relate it with the models to which it is applicable. Some of the items imported are also inter-changeable between some models. As it has not been possible for us to investigate this aspect, we can only make a general observation on this subject that the Government should ensure that the restricted imports are confined to older models now operating on the Indian roads as far as possible since the indigenous ancillary industry has substantially developed.

20.2. **Imports**

A statement showing imports of certain ancillary items during the period 1963-64 to 1967-68 (April to November, 1967) as compiled from the 'Monthly Statistics of the Foreign Trade of India' is given in Appendix XIX. Information given therein covers some of the important ancillaries such as leaf springs, piston assembly, sparking plugs, fuel injection equipment, head lamps, batteries and speedometers. It may be pointed out that the items of ancillaries given in the 'Monthly Statistics of the Foreign Trade of India' may also include some required by industries other than Automobiles, e.g. voltameter, ammeter, starter or starting equipment and gasket asbestos, etc. The statement can, therefore, give only a general idea of imports of certain ancillary items.

21.1. **Export performance**

21. Exports.

21.1.1. Components have very great potential for export and component exports are possible only by the Ancillary Industry because, unlike the vehicle producer who normally produces components only for his current makes and models of vehicles, the Ancillary Industry tools up for the production of various makes and models and has thus the advantage of a greater volume. Yet till recently the need for export orientation was not felt by the ancillary industry in view of the expanding domestic market. Increasing competition and the need to earn foreign exchange, however, has brought about a change. The A.I.A.A.I.A. has informed us that there has been no organised effort to export India-made motor vehicle spares. The exports by merchant exporters in 1965 were, however, reported to be of the order of Rs. 61 lakhs. According to the information furnished to us by the D.G.I.D. (Export Promotion Engineering Cell) the export of commercial vehicles and vehicular ancillaries from India during the last five years was as follows :—

Year	Value (Rs. in lakhs)
1962 63	13.38
1963--64	57.89
1964 - 65	110.79
1965 - 66	117.05
1966 - 67	147.11 **(Post Devaluation).**

Of the combined total exports of vehicles and vehicular ancillaries in 1966-67, the ancillaries alone are reported to have accounted for Rs. 96 lakhs. The countries to which the ancillaries have been exported include Aden. Afghanistan, Australia, Ceylon, Iran, Kenya, Kuwait, Malaysia, Nigeria, Phillipines, South-Vietnam, Sudan, Tanzania, Thailand, U.A.R., U.K., U.S.A., West Germany and Yugoslavia. The items of ancillaries, figuring prominently in exports are pistons, piston rings, gudgeon pins, piston assemblies, crankshafts, connecting rods, fuel injection equipment, and components thereof, laminated and coiled springs, automobile wheels, electrical equipment for automobiles, rear axles, vehicular bolts, nuts and other fasteners, thinwalled bearings, gaskets and brake and clutch linings.

21.1.2. The Engineering Export Promotion Council has furnished the following figures of exports of automobile spare parts during the last six years :—

Year	Value (Rs. in lakhs)
1961	6.22
1962	12.10
1963	16.80
1964—65	46.55
1965—66.	68.13
1966—67 (Pre-devaluation)	65.67
1966—67 (Post-devaluation) (April—Feb.) . . .	96.02
1967—68	112.77

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The growth of exports has brought the industry into international competition which is bound to have a beneficial effect on quality and price. The statement showing country-wise exports of automobile spare parts during the last six years, as furnished by the Engineering Export Promotion Council, is given in Appendix XX. A list showing the automobile parts exported, also furnished by the Council is given in Appendix XXI.

21.2. **Future prospects**

The figures of exports given in the preceding paragraphs indicate that the exports have shown a spectacular increase in the last three years. According to the A.I.A.A.I.A. the components have a very great potential for export. It is claimed by the Association that, if raw materials are made available at international prices, it would be possible to compete successfully in the international markets. The study team of the A.I.A.A.I.A. which recently visited West Asian countries is optimistic about export possibilities. It observes: "with an investment of Rs. 450 million an employment of 30,800 and the capacity to manufacture the entire range of automobile components to any design, specification or drawing, there is no reason why the Indian Automobile Ancillary industry should not be in a position to achieve an export target of Rs. 60 million in the near future".

21.3. **Export Targets**

In a recent discussion on export promotion which the Ministries of Commerce and Industrial Development had with the automobile ancillary manufacturers at New Delhi the industry put forward an export target of approximately Rs. 1.5 crores for the year 1968-69 which would represent 3 per cent of the total production of the industry.

21.4. We are informed that the Association has instituted a National Award for the best performance in exports. It has also set an export target of Rs. 10 crores by 1970-71 and is hopeful of achieving this target if the following conditions are fulfilled :—

"(a) The current duty drawback of 10 per cent f.o.b. does not give full drawback of duty (customs and excise) paid on raw-materials. Drawback should be fixed product-wise to allow full drawback.

(b) The scheme for the reimbursement of the difference between domestic and international prices of steel for exporters which now applies only to mild steel should be extended to tool and alloy steels now manufactured indigenously.

(c) The import duty of 15 per cent on tool and alloy steel may be abolished; the loss in revenue being recovered by raising the duty on finished and semi-finished items.

(d) The present export incentive of 10 per cent. f.o.b. may be raised to 15 per cent., that is the same rate as steel forgings with an additional incentive of 5 per cent for those whose exports exceed a prescribed minimum in any year.

(e) Motor vehicle parts should be included in bilateral trade agreements between India and other countries. This is not being done by Government. A recent instance is the Rs. 5 crore credit to Ceylon, which is very anomalous in asmuch as it covers commercial vehicle exports but not spare parts."

In the context of the present emphasis on exports to earn foreign exchange we recommend that the measures suggested by the A.I.A.A.I.A. be considered sympathetically as exports. apart from earning valuable foreign exchange, would also lead to larger scale of production, yielding economies of scale and thereby reducing prices of ancillaries.

21.5. **Efforts at Export promotion and incentives**

21.5.1. The A.I.A.A.I.A. and the Engineering Export Promotion Council jointly sponsored two sales-cum-study teams in 1966 and 1967 to neighbouring countries—one to South-East Asian countries and the other to West Asian countries. The team to the South East Asian countries visited Colombo, Singapore, Kaulalumpur, Bangkok and Hong Kong. The other team visited Iran, Kuwait, Lebanon, Egypt, Ethiopia and Kenya. Both these teams found that there was sufficient scope for exports of India-made auto spare parts. These teams have submitted detailed reports to Government. The findings and recommendations of both the teams are given in Appendix XXII. Since the teams consisted of representatives from Industry, we hope that their recommendations would receive due consideration.

21.5.2. Incentives

The Export Promotion Engineering Cell of the D.G.T.D. has indicated the current position of the export assistance for automobile ancillaries as follows:—

"(a) all automobile ancillaries with the exception of those manufactured out of ferrous forgings continue to qualify for 20% import replenishment and 10% cash subsidy. The ancillaries made out of ferrous forgings, however, qualify for 40% import replenishment and 15% cash assistance;

(b) regarding duty drawback; automobile ancillaries with the exception of radiators, leaf springs, car wheels, electrical equipment for automobiles and one or two other items qualify for a duty drawback at 10% of the f.o.b. value of export. The excepted items (..........................) are, however, put on brand rates depending upon the duty incidence for each manufacturer ...."

21.6. Specific Handicaps faced by exporters

The Delegation of the Industry which recently visited the West Asian Countries has mentioned the following handicaps which the industry has to face in the promotion of exports :—

(i) In the initial stages exports were confined to stray components in haphazard manner mostly through trade channels and in certain cases exports of sub-standard products tarnished the image of the Indian goods.

(ii) High prices of the goods; and

(iii) Highly profitable domestic market.

21.7. Views on export promotion measures

21.7.1. The A.I.A.A.I.A. has put forth the view that the duty drawback admissible on exports of spare parts of trucks and buses which is 10 per cent of the f.o.b. value is not only inadequate but not quite consistent with the scheme of drawback of duties which provides for the drawback of the whole of the imported duty and Central Excise duty paid on imported materials or indigenous materials used in the manufacture of the exported product. It is of the view that full duty drawback should be available to the industry and the Ministry of Finance should specify the full amount of duty drawback admissible for automobile spare parts product-wise. It has further claimed that the cash incentive of 10 per cent of f.o.b. value for the export of motor vehicle parts in inadequate and should be raised to 20 per cent.

21.7.2. The D.G.T.D. (Export Promotion Engineering Cell) has informed us that, with regard to the grant of cash assistance of 10 per cent of the f.o.b. value of exports on the exports of automobile ancillaries without distinction, the industry in its recent discussions with the Government has put forward a general proposal for differential subsidies for groups of ancillaries based on the materials usage e.g., special steel, mild steels, non-ferrous metals etc., and also economics of cost of production vis-a-vis the actual realisation in exports. We understand that the D.G.T.D. has asked the industry to work out these details and submit them to Government for further consideration. With regard to the flat duty drawback of 10 per cent of f.o.b. value of export, the D.G.T.D. has informed us that the industry has pleaded for higher rates of duty drawback for a few selected ancillaries with an export potential where the actual duty incidence is higher than 10 per cent of f.o.b. value, e.g., leaf springs, car wheels, electrical equipments for automobiles, etc. The D.G.T.D. has also informed us that the Central Board of Customs and Excise has agreed to consider this proposal in principle on the basis of further data to be submitted by the industry in respect of these specific ancillaries.

21.8. Thus both the industry as well as Government are well aware of the need for and prospects of export of automobile spare parts. With the present emphasis on exports, we hope there will be more frequent meetings between the representatives of the ancillary industry and Government so that the difficulties in the way of export are sorted out quickly for the mutual benefit of the country and the industry in general.

21.9. Meanwhile pursuant to Government decision to bring motor vehicle parts under compulsory quality control and pre-shipment inspection under the Export (Quality Control Inspection) Act, 1963 the Export Inspection Councils of India are currently inspecting the manufacturing establishments in the country to determine the export-worthiness of their production. This is a step in the right direction. We hope that this measure will act as a check on export of sub-standard products which is reported to be one of the main drawbacks of our export efforts.

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CHAPTER VIII

Cost of production and estimates of fair selling prices

22. General observations.

22.1. As pointed out already in paragraph 2.3 the Government left it to the discretion of Commission to select such of those ancillary products which contributed substantially to the economics of the production of vehicles. The Commission, therefore, selected important ancillaries for study of their costs, which formed a major portion of costs of ancillary supplies. The selected items and the 18 manufacturing units chosen for cost investigation are as under :—

Item Costed	Name of the Unit
1. Oil Pumps	Indequip Engineerings Ltd.
2. Semi-finished Castings . .	(a) Ennore Foundry. (b) Aluminium Mfg. Co. Ltd.
3. Clutch Assembly	(a) Automobile Products of India Ltd. (b) Turner Hoare & Co. Pvt. Ltd.
4. Radiator Block Assembly .	(a) India Radiators Ltd. (b) Teksons Pvt. Ltd. (c) Bharat Radiators Pvt. Ltd.
5. Fuel Injection Pumps Nozzles etc.	Motor Industries Company Ltd.
6. Dynamos, Starter Motors, Head Lamps, Wiper Motors, Alternators, etc.	(a) Lucas T. V. S. Ltd. (b) Globe Auto Electricals Ltd.
7. Propeller Shaft. . . .	Ex-Cell-O India Pvt. Ltd.
8. Brake Assembly . . .	(a) Brakes India Ltd. (b) Automobile Products of India Ltd.

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9. Servo-equipment, Air Brake and Compressor.	Sundaram Clayton Ltd.
10. Road Wheel Assemblies . .	(a) Wheels India Ltd. (b) Sankey Wheels Ltd.
11. Automobiles Safety Glasses .	Hindustan Safety Glass Works Pvt. Ltd.
12. Panel Instruments . . .	International Instruments Pvt. Ltd.

22.2. The actual costs of production were examined by our Cost Accounts Officers and their reports are forwarded as confidential enclosures separately.

22.3. The dates of the closing of books of accounts differ from unit to unit which necessitated the adoption of the appropriate latest period for cost examination by our Officers. The costs of production during such selected periods would form representative bases for estimates. As the actual costs only serve as a guide in framing the estimates of costs for future, with which we are presently concerned, the actuals have been adjusted in such a manner as to take into account the fair volume of production, wages and salaries at current levels and trend in expenses for the estimated future volume.

22.4. In certain units it was observed that the process of manufacture had not been stabilised in the earlier part of the financial year but it gradually improved towards the end of the accounting year. In such cases the periods during which the processes stabilised were adopted for cost examination. The financial accounting year in some companies (for which the audited accounts were available) related to early periods, and the trend in expenses for such periods was considered not representative for the preparation of estimates. In these cases, ledger figures (though unaudited) for a later period either for a full year, or for part of a year had to be adopted to ascertain costs. Likewise there were many other considerations which had to be kept in view by our Officers before selecting a period for cost analysis and obviously, therefore, the period for which the actual costs were examined varied from unit to unit. The disparities in the periods chosen for costs studies are not significant since the actuals are used as base for estimating future costs after necessary adjustments in materials, expenses etc.

22.5. 14 out of the 18 units visited by our Cost Accounts Officers do not maintain any costings system which would have provided our Officers with adequate data to build up costs satisfactorily.

22.6. In five cases, practically no cost data were available whereas certain units which had no costing system analysed their records as desired by our Officers, which gave somewhat reasonable data for costs calculations. Under such variegated systems of records keeping, which were not uniform, our officers had to face the problem offered by individual units in practical and appropriate ways to extract figures for cost calculations with the sole objective of developing costs within reasonable degrees of accuracy which would be reckoned as fair indications in framing reasonable estimate of prices for the selected products. Thus in certain cases the costs were compiled on the basis of calculated figures where cost records were inadequate, whereas in other cases costs had to be developed by allocating actual expenses based on technical estimates prepared by the representatives of the Companies.

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23. Approach in estimating future costs.

23.1. We have adopted the trend in costs as revealed during the costed period and have framed the estimates of fair selling prices for future after suitably modifying the expenses wherever considered necessary. In developing a fair selling price for future, it is necessary to assume a projected volume of production. Before coming to a decision on the average of production for individual units, we have considered the views of the representatives of the costed units and all other relevant aspects of the industry. After estimating a particular volume of production for each unit, we have proceeded to estimate the expenses in the context of the relevant volumes of production. The costs for direct materials are based on the latest available rates/prices and also with reference to the quantitative consumption (inclusive of reasonable provisions for rejections/wastages) based on either actual figures or on standards maintained by the Companies as was needed in the appropriate cases. The necessity for additional personnel either in the categories of workers or in the categories of staff relevant to the estimated volumes of production was also considered and suitable provisions made as were warranted by the circumstances in each case. Salaries and wages with suitable grade increments for future have been adopted in the estimates. Similarly, the fringe benefits, viz., Provident Fund, Employees State Insurance etc. have been modified consistent with the salaries and wages levels estimated. The expenses for the repairs and maintenance have been provided with due regard to the volumes of production anticipated, as also for the current prices of stores used for maintenance purposes. The additions to assets wherever applicable have been considered and depreciation provided thereon based on Income Tax rates with extra shifts allowances wherever the machinery is to run extra shifts for the estimated output. The items of overhead have been estimated on the merits of each case. Wherever new agreements have been entered into between the Company and the workers and/or staff union or indication has been given by the management of the likelihood of implementation of new agreement under the process of negotiation, suitable provisions have been made in the estimates to cover such items. Where products are backed for delivery to the main automobile manufacturers for use as original equipment in certain cases, the latest cost of packing materials and levels of consumption have been estimated. The selling expenses of own departments of Companies have been included in the price structure; but the commission payable to the selling agents has been excluded as this item has to come out of the margin of return. The royalty and/or technical fees to be paid to the relevant collaborators have been taken into account as per the terms of agreements which would be in force during the period for which the estimates have been made.

23.2. The requirements of working capital have been assessed for individual units separately based on an appropriate number of months' cost of production (excluding depreciation). Written down value of fixed block for the future period has also been taken into account. These two elements constitute the capital employed and on this, a rate of return of 15% has been provided for each unit. This return should enable the Companies to meet Interest, Bonus, provision for Development Rebate, Taxation, Dividends etc.

23.3. Having discussed our approach in estimating fair selling prices for future in the preceding paragraphs, we now propose to deal with the prices of each product and also compare the prices between Companies where the same product is produced by different Companies. These aspects are discussed in detail in the succeeding paragraph.

24. Cost of production and estimates of fair selling prices.

Our estimates of cost of production and fair selling prices for twelve items selected by us are discussed below.

24.1. **Oil Pumps**

24.1.1. **Indequip Engineering Ltd.**—The Company was incorporated in 1961 and its production activities commenced in July, 1962 which comprise sizing machines, glass machinery, ring spinning frames etc. Production of Oil Lubricating Rotor Pumps which began in July 1962 is one of its lines. For the manufacture of rotor pumps, it has an Agreement for collaboration with M/s. Hobourn-Eaton Manufacturing Co. Ltd. United Kingdom, which provides for a royalty at 5% of net sales value (after deducting packing, freight and value of components supplied by the collaborators). The paid-up capital of the Company for the year ended 30th September 1965 (1964-65) stood at Rs. 34.95 lakhs and the total sales turnover during the year was Rs. 54.48 lakhs of which the sales of rotor pumps were Rs. 11.82 lakhs or 21.7%. The gross profit (subject to taxation, interest etc.) was Rs. 7.71

which form 14.2% on total sales and 9.4% on capital employed. Due to the combined accounts for all the products, the gross profit relating to the product under cost examination could not be developed separately. The installed capacity for the manufacture of rotor pumps is 72,000 units (on three shifts basis) against which the production during 1964-65 was 32,167 nos. and that during nine months period ended on 30th June 1966 was 26,656 nos. The accounts for nine months ended on 30th June 1966 (unaudited) were taken as the basis of cost study, and estimates have been developed for future. The estimate of production for future has been taken at 93,000 nos. on an average per annum. Return has been calculated at 15% on the capital employed and the working capital has been reckoned at 4½ months' cost of production. The estimated fair selling prices are shown in table 17.

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TABLE 17

Commission's Estimates of Fair Price of Oil Pumps

Sl. No.	Name of the Company	Particulars	Material cost Rs.	Above material cost Rs.	Return Rs.	Fair selling price Rs.	Current selling price Rs.	Margin as % of current price
1	2	3	4	5	6	7	8	9
	Indequip Engg. Ltd.	Hindustan . .	9.39	12.50	5.83	27.72	29.04	4.5
		Fiat . .	7.10	11.40	5.12	23.62	38.75	39.0
		Willy's Jeep . .	6.13	14.38	5.38	25.89	43.55	40.6
		Standard . .	2.42	9.11	3.87	15.40	25.50	39.6
		Standard Trucks .	3.80	12.27	4.43	20.50	57.25	64.2
		Parkins Engine .	6.28	24.93	7.12	38.33	52.10	26.4

24.1.2. **Fair prices for Oil Pumps.**—This is the only Company which manufactures rotor pumps in the country and by virtue of its monopolistic character in the field, its selling prices are high. This is indicative of the available margins when compared to its current selling prices with our estimates. There is thus scope for some reduction in the prices of certain items. We are of the view that items relating to passenger cars could call for some adjustment, except that for Ambassador. A reduction in the current selling prices of Fiat and Standard by about 30 per cent may not be viewed as unduly high as the overall profitability could sustain the general financial position of the company. The other items being supplied to manufacturers of commercial vehicles which are decontrolled, we would not be justified to recommend any reductions, though in equity we may suggest that the company may be advised to reconsider its existing prices and amend them suitably.

24.2. **Semi-finished Castings, Ferrous and Non-ferrous.**—With a view to finding out whether the prices charged by the manufacturers of semi-finished castings were reasonable or not, two units were selected for cost study viz. Ennore Foundries Ltd., Madras and Aluminium Manufacturing Co. (Pvt.) Ltd., Calcutta. While the former one manufacturer both aluminium castings and ferrous castings, the latter one manufactures only the aluminium castings. Before any comment is offered about the reasonableness of the prices charged by the two units, a point has to be considered as to whether the semifinished castings can be placed on a part with other ancillary products covered in the report. The other ancillary products supplied to the main automobile manufacturers are directly taken in the final assembly line and are fitted to the vehicle i.e., the ancillary products do not undergo any further process before final assembly; but the case with the semi-finished castings is not of this nature. The semi-finished castings are to be processed further before being used in other sub-assemblies, practically no semi-finished castings being directly issued to the assembly line; of course, there are certain castings which with minor operations may be fitted with the sub-assemblies. In cases where the semi-finished castings are delivered direct to the main automobile manufacturers, viz. cylinder block or cylinder head etc. it is not difficult to regulate the prices of the automobile vehicles with reference to the fair prices of castings; but in cases where the castings are supplied first to the manufacturer of the ancillary products, it will be a stupendous task to give a fair price of the vehicle in relation to the fair price of the castings. The problem will be further complicated if some intermediate process is carried on by some other party between the supply of semi-finished castings and delivery of the partially processed castings to the ancillary producer. It will involve the determination of a fair price at different stages with the progress of the manufacturing processes on the castings. Further, if semi-finished castings are considered for fixation of fair prices, the case for semi-finished forgings also is to be taken up for examination and the analogy can be further stretched to other raw materials also. Considering all the aspects we have come to the conclusion that it will not be proper to treat the castings and forgings as ancillaries for the purpose of this enquiry and have, therefore, kept them out of the purview of the determination of fair prices.

24.3. Clutch Assemblies

24.3.1. **Automobile Products of India Ltd.**—The Company is in business for about 18 years and the main activity related to production of Lambretta scooters; clutches and brakes for various types of vehicles and stationary industrial equipment as sideline activities. The subscribed capital as at 31-7-1965 was Rs. 84 lakhs and the sales turnover during 1965 amounted to Rs. 522.96 lakhs. The gross profit (subject to interest, bonus and other items not connected with the production activities) totalled to Rs. 46.11 lakhs and this when related to the capital employed and sales turnover, worked out to 15.6% and 8.8% respectively. The accounts for the year ending 31st July 1966 have been adopted for costing. The Company has three foreign collaborators viz. (i) Automotive Products Co. Ltd., England, under the trade name Borg and Beck; (ii) Fichtel & Sachs West Germany, for the production of clutch assemblies; and (iii) Borg-Warner, International Corpn. U.S.A. The collaboration agreement with Automotive Product Co., is for a period of 5 years from September 1965. In case of Fichtel & Sachs, it is for a term of 8 years from 1st January 1964. However, the agreement with Borg-Warner International, U.S.A. was not renewed when it expired in December 1963. Borg and Beck clutches are used as original equipment in Standard Harald, Fiat, Hindustan Ambassador, Standard 1 Ton and Leyland trucks (only driven plate assembly), whereas the Fichtel and Sachs clutches are used in the Bajaj 4-Wheeler truck and T.M.B. trucks. The clutches manufactured under the Brog-Warner were not supplied as original equipment. The present study relates to the cost of production by ancillaries of clutch assemblies used in automobiles. As against the annual capacity (on double shift basis) of 120,000 sets, the production of clutch sets for the year ending on 31st July 1966 was 49,429 and 105,914 nos. as spares (either cover assembly or driven assembly). In the estimates for future an average production of clutch assemblies of 93,500 sets has been adopted. Return has been provided at 15% on capital employed and the working capital in the capital employed reckoned at six months' cost of production. Normally clutches are sold on "ex-works terms" but in case of clutches for Hindusthan Ambassador car, Bedford, Leyland and the T.M.B. trucks the quotations are ex-destination (which include secondary packing, freight, handling and transit insurance). The estimates of fair selling prices are shown in table 18.

24.3.2. **Turner, Hoare & Co. Ltd.**—The Company established in 1895 has become a subsidiary of Mahindra & Mahindra Co. since 1945. This unit has various trading activities and at present it holds limited foreign agencies and various indigenous agencies to sell products like concrete mixers, diesel engine, fire hose, pumping sets. In 1961 the company entered into an agreement for collaboration with M/s Dana Corporation, U.S.A., now Dana International for the manufacture of Dana Clutch Assemblies. The production of Dana Clutch Assemblies actually commenced in September 1964. The subscribed capital as at 31st October 1965 (1964-65) stood at Rs. 16.20 lakhs. The gross profit (subject to taxation, bonus, interest charges etc.) amounted to Rs. 1.25 lakhs which represented 5.8% on capital employed and 2.1% on the sales turnover. From the provisional accounts for six months ended on 30th April 1966 costs were compiled. The licensed capacity is for an assembly of 36,000 nos.

of clutches per annum (on three shifts basis) against which the production during the six months ending on 30th April 1966 was 4,450 pressure plates and 8,506 driven plates, both being parts of clutch assembly. The performance of the Company was very low and the reason attributed was the non-stabilisation of the manufacture of clutch assemblies production. During the costed period the clutches were manufactured and assembled by Mahindra & Mahindra and this arrangement is likely to continue till this ancillary unit is able to stabilise manufacture. The entire clutch production is meant for Jeeps. The whole factory is under Mahindra & Mahindra's books except for certain plant and machinery being owned by the subsidiary in its books. Except for depreciation in respect of machinery recorded in the books of the subsidiary company, all other conversion charges are incurred by the holding company. The subsidiary is charged for all expenses either through periodical debits or lump sum annual amounts or through specific rates on output as the case may be, depending upon the class of charges. The basis on which such charges are made could not be explained by the company excepting that such charges are accepted on the basis of 'managerial decisions'. Since such charges are accounted for in the company's books and from the basis for the determination of trading results, these were adopted in the calculation of costs. We have, however, developed estimates of costs for this unit also. Production of clutches was adopted at 17,300 sets or 48% of the capacity. This level is in line with the production being aligned to the demand of the holding company. Return has been calculated at 15% on the employed capital and the working capital taken at six months' cost of production. As this ancillary is linked to the production of jeeps only and operates on limited demand, any costs based on this unit will not be representative and as such we have ignored the costs at this unit which works far below the capacity. Further, the incidence of cost of this item is very small. The results of cost study would indicate that there are losses in the case of clutches for passenger cars and small surplus in the case of those for commercial vehicles.

TABLE 18

Commission's Estimates of Fair Price of Clutch Assemblies

Sl. No.	Name of the Company	Particulars	Material cost	Above material cost	Return	Fair selling Price	Current Selling Price	Margin as % of Current Price
			Rs.	Rs.	Rs.	Rs.	Rs.	
1	2	3	4	5	6	7	8	9
1	*Automobile Products of India Ltd.*	Standard Herald 6¼%	37.08	24.52	8.81	70.41	51.58	(-)36.5
		Fiat—7¼% . .	39.72	18.76	7.49	65.97	64.20	(-)2.8
		Hindustan—8" .	52.39	39.57	14.00	105.96	64.56	(-)64.1
		Standard One-Ton-9"	58.24	34.63	12.26	105.13	120.60	12.8
		Bedford—13"	106.59	60.57	21.86	189.02	207.83	9.1
		Bajaj 4-Wheeler—7¼"	72.51	24.02	9.93	106.46	110.50	3.7
		T.M.B.—11" .	120.76	58.69	21.78	201.23	182.81	(-)10.1
2	*Turner Hoare & Co. Ltd.*	Dana Clutch (Jeep)	30.80	54.93	10.35	96.08	95.00	(-)1.1

24.3.3. **Fair prices for clutches.**—Dana Clutches for jeeps at Turner Hoare indicates a fair price of Rs. 96·08 each against the current selling price of Rs. 95 each showing a deficit of about 1·1% of selling price. In regard to current prices charged by Automobile Products of India Ltd., Bombay for Original Equipment supplies. the surplus margins available over our estimates in three cases range between 4% and 13% on selling prices whereas in other items there are shortfalls of 3% and 64%.

24.4. Radiators

24.4.1. **India Radiators Ltd.**—This Public Limited Company commenced production of radiators in 1956-57. It has a paid-up capital of Rs. 11.83 lakhs as at 31st March 1967. After suffering losses in the initial years i.e. upto 1958-59, the Company's profit gradually increased in the subsequent years on account of considerable increase in the volume of production. The gross margin of return (before the charges for interest, bonus, etc.) totalled Rs. 5.45 lakhs for the year 1966-67 which represented about 14.9% on the capital employed. The dividends declared on equity shares in that year (subject to tax) was 10%. Although the margin of profit for that year was lower when compared to that in the earlier two years, this did not indicate any shrinkage in business. The sales turnover during the year was the highest. The increase in wages consequent upon the steep rise in the dearness allowance combined with the increased prices of the imported materials after rupee devaluation were not adequately covered by the felling prices and this has neutralised a substantial portion of margin. M/s Suddeutsche Kuhlerfabrik Julius Fr. Behr. Stuttgart—Feuerbach, Germany (Behr) were the technical collaborators of this company in the manufacture of radiators for motor vehicles and the agreement with them dated 1-6-1962 provided for payment of royalty for five years at stipulated rates. The agreement being not renewed after five years, no royalty is payable after 1-6-1967 and as such no provision for royalty payment has been made in the estimates for fair selling prices. We have adopted the year ending 31st March 1967 for the purpose of costing. The present capacity of the factory on single shift basis for the manufacture of radiators is about 3,000 nos. per month.

Against this the production of radiators during 1966-67 (which was selected for cost examination) was 28.523. the capacity thus utilised being about 80%. The volume of production adopted for estimate is 36,000 radiators. The return has been calculated at 15% on the capital employed, the working capital having been taken at four months' cost of production. The fair selling prices have been shown in table-19.

24.4.2. **Teksons Private Ltd.**—Teksons Private Ltd. was registered in 1953 but went into commercial production only in 1961. The company at present manufactures radiators, inter-coolers, Oil coolers, heat exchangers, low pressure oil and fuel hoses. It has a plan to manufacture high pressure hoses and brake hoses. It has two collaboration agreements with foreign companies viz. (1) Auto Kuhler--GES, Gmbh, West Germany for the manufacture of radiators and (2) Technochemia Kessler Co. West Germany for the manufacture of flexible hose pipes. The agreements are for a period of 10 years from April 1960 and the terms of remuneration are 5 per cent of the taxable profits or the first five years and 2.5 per cent thereafter. The paid-up capital for the year ending on 31st March 1966 was Rs. 22.5 lakhs. The net sales and gross profit for that year were Rs. 80.48 lakhs and Rs. 18.69 lakhs respectively. The profits represented 36.8% on the capital employed and 23.2% on sales. The profit and sales rapidly increased from 1964 and were highest in 1966. Although the profits were good, no dividend was declared by the company, the entire profit having been ploughed into business. The present installed capacity for the manufacture of radiators was stated to be in the region of 40,000 to 50,000 radiators against which the actual production of radiators of all types was 16,280. The radiators manufactured are tubular, cellular and Mc-Cord types required for a large variety of automobile and stationary engines. Out of these, the radiators supplied as original equipment were only Tata Mercedez Benz radiators Part No. 2901 and Dodge radiators Part No. 13055 and these types were selected for cost examination. This unit manufactures almost all the components for a radiator. The financial year ending on 31st March 1966 was adopted for cost examination. The annual average production for future has been estimated at 36,000 radiators of all types including those for other automobiles as also stationary engines. Return has been calculated at 15% on the capital employed and the element of working capital has been assumed as four months' cost of production. The estimated ex-factory prices are shown in the table 19.

24.4.3. **Bharat Radiators Pvt. Ltd.**—Bharat Radiators Pvt. Ltd. was registered as a private limited company in 1958 and went into commercial production in 1959. Its main activity is the manufacture of cores for radiators, the other components of radiators viz. tank assembly, side channels, overflow pipe, filler neck assembly etc. being either supplied by the automobile manufacturers themselves for whom the radiators are manufactured or are purchased from the market. There is a Press Shop in which only the header plates for radiators are manufactured as also some jobs from outside parties are executed. The issued and subscribed capital for the year ending on 31st March 1966 stood at Rs. 3 lakhs. The net sale and gross profits (subject to interest, taxation, Directors commission etc.) for that year amounted to Rs. 23.49 lakhs and Rs. 5.24 lakhs respectively. The profit represented 22.31 per cent on sales and 29.32 per cent on capital employed. The sales turnover and percentage of profit were highest during 1966 compared to the figures for previous three years. Though no dividend was declared for any of three years and the entire profit was retained in the business, the reserves have been capitalised twice and bonus shares issued in 1965-66 and 1966-67 of the value of Rs. 3 lakhs and Rs. 5 lakhs respectively. The licensed capacity is for the manufacture of 15,000 radiators, though the installed capacity was stated to be in the region of 25,000 nos. The actual production of radiators during 1965-66, which was adopted for cost examination was 13,787 nos. only. Most of the radiators are supplied as original equipment for the different automobile and stationary engine manufacturers. The estimate of production was assumed at 20,000 radiators. The same rate of return as has been provided in respect of the other two units has been allowed for this unit also. Excepting the radiators for Jeep and Tempo, the fair selling prices estimated for this unit do not represent the prices for complete radiators but they represent the prices of core and assembly charges only. Even for Jeep and Tempo the Company manufactures Core only and the other parts are purchased from the market. The fair prices estimated by us are shown in the table 19.

TABLE 19

Commission's Estimate of Fair Price of Radiators

Sl. No.	Name of the Company	Particulars	Material cost	Above material cost	Return	Fair Selling price	Current Selling prices	Margin as a % of current price
			Rs.	Rs.	Rs.	Rs.	Rs.	%
1	2	3	4	5	6	7	8	9
1.	*India Radiators* .	(a) Willy's jeep .	125.66	38.93	12.06	176.65	188.41	6.2
		(b) Ambassador .	139.00	33.86	12.66	185.52	193.00	3.9
		(c) Benz . .	325.74	91.88	30.57	448.19	480.00	6.6
		(d) Leyland . .	311.14	81.04	28.79	420.97	526.00	20.0
		(e) Fiat . .	99.46	41.08	10.31	150.85	245.00	38.8
		(f) Bajaj Tempo O. T. 14 . .	106.77	51.76	11.61	170.14	185.00	8.0
		(g) F.C. 150 Truck	123.86	42.84	12.23	178.93	154.62	(—)15.7
2.	*Teksons Pvt. Ltd.*	(a) Benz 2901 .	255.29	129.17	24.76	409.22	471.00	13.1
		(b) Dodge 13055 .	193.44	95.32	19.75	308.51	..	..

3.	*Bharat Radiators*	(a) Fiat . .	79.46	23.69	6.64	109.79	175.00	37.3
		(b) Jeep . .	122.12	23.03	9.28	159.43	189.39	15.8
		(c) Tempo . .	87.30	15.01	6.00	108.31	115.94	6.6
		(d) Dodge Truck (PAB/13055/13016)	156.87	45.37	13.07	215.31	165.92	19.0
		(e) Dodge Truck (PAB/26268/26283)	184.51	56.22	15.74	256.47	315.83	18.8
		(f) Dodge Station Wagon PAB 4802	214.09	56.22	17.22	287.53	366.02	21.4

24.4.4. **Fair prices for Radiators.**—The radiators manufactured by these three units are not common excepting one or two items. In the case of Bharat Radiators the costs for jeep and Tempo radiators only are comparable with the costs of corresponding items manufactured by India Radiators. The costs against other radiators manufactured by Bharat, representing only the costs of core and assembly charges, have not been considered by us for any comment in regard to their selling prices. The fair selling prices estimated for Bharat Radiator represent ex-factory prices to correspond to their practice of quoting selling prices on ex-works basis. In the case of other two units, however, our estimates represent fair prices f. o. r. destination in conformity with their trading practice to quote prices f.o.r. destination. Our estimates of fair f.o.r. destination prices for Jeep and Tempo radiators manufactured by India Radiators are Rs. 176.65 and Rs. 170.14 respectively against which their corresponding ex-works prices would approximately work out to be Rs. 172.23 and Rs. 163.28. As against these, the ex-works prices estimated for the corresponding radiators of Bharat make are Rs. 159.43 and Rs. 108.31 respectively. The disparity in cost in the Jeep Radiators between the two companies is not worth consideration although the cost for Tempo radiator is on the lower side in the case of Bharat. One of the reasons for lower cost is the lower cost materials. Bharat Radiator purchases components from market whereas India Radiators manufactures them. The Benz radiators is the only common item of manufacture between India Radiators and Teksons. The estimated f.o.r. price for Benz Radiator manufactured by India Radiator is Rs. 448:19 as against Rs. 409:22 of Teksons make. The major activities of Bharat Radiators consist of the manufacture of cores and assembling them with parts supplied by Premier Automobiles and it does not cater to the requirements of other automobile manufacturers. In the case of Teksons, the manufacture of automobile radiators represents a small portion of their activities. India Radiator's entire activities consist of the manufacture of automobile radiators either for Original Equipment supplies or for supplies to the replacement market. For the volume and diversification of products the cost of production of India Radiators may, therefore, be taken as representative. While comparing the current selling prices of India Radiators with our estimates of prices, we find that excepting two cases viz. Layland radiators and Fiat radiators, their current prices are marginally higher and in case of F.C. 150 Truck their current price is lower. The predominent item in the total cost of a radiator is the cost of sheets and strips both of copper and brass, the prices of which fluctuate violently in tune with the international market and it is not possible to adopt a fixed rate on the basis of some long term view. We have estimated the costs of materials on the basis of latest available prices of copper and brass strips and sheets.

24.5. Diesel Fuel Injection Equipment

24.5.1. **Motor Industries Co. Ltd.**—This public limited company was registered in 1951. It has a collaboration agreement with M/s. Robert Bosch, GMBH Stuttgart, West Germany for the manufacture of different types of diesel fuel injection equipment and also sparking plugs, electric horns, generators, starters, etc. It is also the sole concessionaire in India for the products of the German concern. Royalty at the rate of 2 per cent on sales is payable to its collaborator. The paid-up capital of MICO on 31-12-1965 was Rs. 225 laks. Bosch held shares to the extent of Rs. 129.375 lakhs (i.e. 57.5 per cent of the total). In 1965 the gross profit of the company before payment of managerial remuneration, interest, bonus, taxes and the like was Rs. 358.2 lakhs. The gross profit represented some 41 per cent of the sales turnover and 78 per cent on the employed capital. The installed capacities in 1965, actual production in that year, the percentage utilisation of capacity and the future estimate of production in respect of each product are shown below :—

Items	Installed capacity (Two shifts) ('000)	Production (Two shifts) ('000)	Capacity utilisation %	Production estimate for the future ('000)
1. Sparking Plugs. .	1728.0	1651.9	95.6	1812.0
2. Single Cylinder Pumps	138.0	122.9	89.1	185.0
3. Multi-Cylinder Pumps	37.2	42·7	114.9	47.3
4. Nozzle holders .	319.0	359.7	112.8	421.0
5. Nozzles . . .	900.0	984.6	109.4	1329.0
6. Filters . . .	55.0	51.6	93.7	58.2
7. Filter Inserts-felt .	204.0	215.2	104.5	271.0
8. Filter Inserts-Paper .	168.0	222.4	132.4	316.2
9. Elements . .	984.0	1050.9	106.8	1338.0
10. Delivery Valves .	984.0	1021.3	103.8	1317.0
11. Glow Plugs . .	250.0	14.1	5.6	128.0
12. Connecting Insulator Assy.	250.0	36.6	14.6	121.0
13. Glow Indicator .	45.0	2.2	4.9	24.0
14. Glow Resister . .	45.0	2.2	4.9	21.0

It may be seen from the above figures that actual production was in excess of the installed capacity in seven cases but for the remaining items, the utilisation of capacity is quite low. The company has expansion plans but as these are some way off, we have adopted the existing capacity for building up costs. The levels of production assumed as a basis for calculations are given in the last column of the above table. The audited accounts relating to the calendar year 1965 have been taken as the basis for the cost calcultions. Working capital has been allowed at 4 months' cost of production. Return has been provided on capital employed at 15 per cent.

24.5.2. **Fair prices for Fuel Injection Equipment.**—The fair selling prices of diesel fuel injection equipment have to be estimated by making suitable adjustments for the charges applicable to the other items also produced by the unit. Table 20 brings together our estimates and the existing prices for purposes of comparison. As has been stated earlier, arithmatically the gross profit earned by the unit formed as much as 78 per cent of the employed capital. Scrutiny revealed, however, that the high margin was attributable to items other than fuel injection equipment and that too on account of spare part sales. Upon the whole, as can be seen from the statement, O.E. parts are actually sold in the market at less than the fair prices estimated by us.

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TABLE 20

Commissions estimate of Fair price of Diesel Injection Equipment

Name of the Company	Particulars	Material cost	Above Material cost	Return	Fair selling price	Current selling price	Margin as % of current price
1	2	3	4	5	6	7	8
		Rs.	Rs.	Rs.	Rs.	Rs.	
Motor Industries Co. Ltd.	*Multi-Cylinder Pumps :*						
	Perkins P—6 .	173.39	265.20	43.45	482.04	461.29	(—)4.5
	Perkins P—6—354	600.58	267.58	89.01	957.17	540.20	(—)77.2
	TMB OM—312 .	241.16	373.32	59.85	674.33	596.40	(—)13.1
	Leyland AL—370	571.14	264.34	59.36	894.84	832.03	(—) 7.5
	Meadows . .	618.80	233.21	56.68	908.69	..	..
	Nozzle holders & Nozzle (Set):						
	Perkins P—6 .	8.82	14.65	2.22	25.69	29.85	13.9
	Perkins P—6—354	44.41	21.43	4.68	70.52	32.77	(—)115.2
	TMB OM—312 .	4.23	11.29	1.63	17.15	20.30	15.5
	Leyland AL—370	10.78	22.29	3.20	36.27	44.30	18.1
	Meadows . .	11.86	19.42	2.90	34.18	..	..

Filters :

Perkins P –6	44.57	27.23	5.45	77.25	52.50	(–)47.1
Perkins P—6—354	83.70	13.04	5.16	101.90	44.83	(—)127.3
TMB OM—312 .	44.42	28.84	5.55	78.81	52.50	(—)50.1
Meadows . .	44.42	28.58	5.54	78.54	..	(—) ..
Leyland AL 0.370 (Duel).	44.75	28.03	5.51	78.29	42.50	(—)84.2
Leyland AL 0.370 (Single).	15.17	14.74	2.51	32.42	21.25	(–)52.6

24.6. Dynamos, Starter Motors, Head lamps, Wiper motors, Alternators, etc.

24.6.1. **Lucas T.V.S. Ltd.**—This public limited company was registered in December 1961. The paid-up capital as on 31st March 1966 is Rs. 220.00 lakhs. At present manufacture of various kinds of automobile ancillary products viz. Starters Dynamos, Regulators, Head lamps, Distributor Flashers, Wipers and Solenoids, i.e. Switches is undertaken. It has plans to introduce certain other products in the near future, viz. alternators, switch gears etc. M/s. Joseph Lucas (Industries) Ltd., U.K. is the foreign collaborator for its products who holds 60% of the issued capital as per the Agreement and also takes part in the management of the Company. The collaborator is also entitled to a royalty and technical aid fees of 3 per cent of the factory cost (excluding cost of components supplied by it) on all products manufactured and sold. Till 1966, the annual accounts were closed on 30th November, each year but the date was thereafter changed to March each year. The financial accounts for the period ended 31st March 1966, were for a period of 16 months and the gross profit during this period (subject to interest, taxation, etc.) amounted to Rs. 50.15 lakhs and this represented 16.24% on capital employed. The sales turnover during the sixteen months period amounted to Rs. 422.12 lakhs and it is likely that the annual turnover would go up in future with the rise in production. The accounts of 4 months period ending 31st March 1966 were adopted for cost examination. The installed capacity and the actual production for the year ended March 1966 for the different types of products were as under:—

	Installed capacity	Actual production	Capacity utilised
	Nos.	Nos.	%
(a) Starter	74,000	53,041	71.7
(b) Dynamos	78,000	57,672	73.9
(c) Regulators	80,000	63,145	78.9

	Installed capacity Nos.	Actual production Nos.	Capacity utilised %
(d) Head lamps	1,20,000	84,294	70.3
(e) Distributors	50,000	26,826	53.6
(f) Flashers	40,000	42,365	105.9
(g) Screen Wipers	55,000	20,472	37.2
(h) Solenoids	28,000	692	2.5

The installed capacity is in terms of final assembly units. Initially, purchased components were only assembled but later on progressive manufacture of components and the work of sub-assembly were resorted to in stages. During the period ended 31st March 1966, it was stated that indigenous manufacture had reached about 65%. In working out a reasonable price for future the following annual levels of production were adopted :

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	Nos.
(a) Starter Motor	80,300
(b) Dynamo/Alternator	83,800
(c) Regulator	73,800
(d) Head lamps	1,11,200
(e) Distributor	30,900
(f) Wiper Motor	42,800

The company expects to reach a stage of complete indigenisation by the end of 1968. It is difficult to assess properly at this stage to what extent the consumption of materials and manufacturing time would vary when the Company starts manufacturing the complete range of own components in the absence of adequate data. In framing the estimates, therefore, the latest known stage of manufacture together with only those components replaced by known indigenous manufacture in future for which reasonable data were available has been adopted. Additions to assets relating to such manufacturing stage has also been taken into account. Return has been provided at 15% on capital employed. The working capital in the capital employed has been reckoned at six months' cost of production. The fair selling prices estimated for this unit in respect of its products are shown in table 21.

24.6.2. **Globe Auto Electricals Ltd.**—This is a public limited Company registered in 1961. The manufacture in this Company mainly consists of voltage regulators, ignition switch, ignition coils, wiper motors, ignition distributor, alternators, generators and starting motors. The commercial production of these commenced during the period June 1963 to August 1965. Technical collaboration is obtained from two foreign companies for the manufacture of the entire range of products. For the manufacture of Alternators, Generators and Starting Motors, the Agreement (for 10 years from 1961) with Prestolite Inetrnational Co., U.S.A. provides for a disclosure fee at $15,000/- and to a continuing fee at 4% on Globe's net sale price of generators and starting motors besides participation in equity shares to the extent of 35% of the shares. For the other items, the collaboration Agreement is with M/s. Fabbrica Italiana Magneti Marelli, Italy and provides for at £ 6,000/- towards initial disclosure fee and royalty at 2.5% net on sales of the contract products and further, components required for the contract products are to be imported from them based on the phased manufacturing programme of Globe. The paid-up capital for the year ended 30th September 1966 (1965-66) stood at Rs. 49.63 lakhs. of which shares held by Prestolite amounted to Rs. 13.63 lakhs or about 27.5%. The sales turnover and the operating profit for the year ended 30-9-1966 totalled Rs. 113.1 lakhs and Rs. 22.9 lakhs respectively. The profit formed 24.1% on the capital employed and 20.3% on the sales turnover. During this year only the Company was able to earn some appreciable profit against which the past accumulated losses were wiped off and a general reserve could be created. From this general reserve dividend at 8% on equity shares was declared. The half year period ending 31-3-1967 was selected for costing. The licensed capacity and the production during the latest six months period ended on 31st March 1967 are given below :—

Items	Licensed capacity Nos.	Production (Six months) Nos.	Licensed Capacity Utilisation %
1. Voltage Regulator	40,000	110	0·6
2. Ignition Switch	25,000	11,602	92·8
3. Ignition Coil*	15,000	7,952	106·0
4. Wiper Motors* . . .	15,000	27,195	362·6
5. Ignition Distributor* . . .	15,000	4,274	57·0
6. Alternators	25,000	7,756	62·0
7. Generators			
8. Starting Motor	25,000	5,582	44·7

*(Single shift converted to double shift as the production was achieved by two shifts working).

In estimating the fair selling prices, the following pattern of production per annum has been adopted.

Items	Average per annum Nos.
1. Voltage Regulator	16,500
2. Ignition Switch	29,000
3. Ignition Coils	50,000
4. Wiper Motors	87,700
5. Ignition Distributor	17,300
6. Alternators & Generators	35,000
7. Starting Motors	21,800
TOTAL .	2,57,300

The Company has plans to delete some more components from its import list for production at its factory. Another collaboration Agreement has been entered into by the Company with the Bendix Corporation of U.S.A. for the manufacture of Bendix Starter Drives which are used in the assembly of Starting Motors. We have, however, kept the whole project out of our cost estimates as we have considered it not feasible to prepare a realistic estimate till the project is actually executed and commercial production begun. The working capital has been provided at six months' costs of production and Return has been calculated at 15% on capital employed. The fair selling prices estimated by us are shown in the table 21.

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TABLE 21

Commission's Estimate of Fair Selling Prices for Dynamo, Starter, Head Lamp, Wiper Motor, Alternator, etc.

S. No.	Name of the Company	Particulars	Material Cost	Above Material Cost	Return	Adjustment for sterling devaluation	Fair Selling Price	Current Selling Price	Surplus Margin as % of current prices
			Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
1	2	3	4	5	6	7	8	9	10
1.	*Lucas T.V. S. CAV Starter:*								
		Telco-SP5-12B-25	298.51	150.47	65.25	(–)33.00	481.23	559.83	14.0
		Leyland-BS5-24P-190	283.81	140.31	60.16	(—)30.00	454.28	524.00	13.3
		Simpson-BS5-12P-189	280.73	138.60	59.43	(—)32.00	446.76	513·75	13.0
		Simpson/Hindustan CA45	342.26	60.38	37.48	(—)47.00	393.12	402.59	2.4
		Leyland SL 5	516.92	90.05	60·48	(–)70.00	597.45	808.00	26.1
								Average	15.5%

TABLE 21—(*Contd.*)

1	2	3	4	5	6	7	8	9	10
1.	*Lucas T.V.S Lucas Starter :* —contd.								
		Herald/Hindustan M35G	64.81	34.89	14.20	(—)6.50	107.40	108.05	0.6
		Standard One Ton M45PE	194.73	61.42	30.71	(—)24.00	262.86	350.81	25.1
		Premier/Bajaj M3-PE	137.03	45.81	23.64	(—)18.00	188.48	178.05	(—)5.9
								Average	12.2
		Lucas Dynamo :							
		Hindustan C40-LQ.	81.82	44.63	19.50	(—)9.90	136.05	141.77	4.0
		Telco-C40-LQ	86.95	47.75	21.10	(—)9.80	146.00	152.10	4.0
		Simpson C40-LQ	81.82	44.49	19.48	(—)9.90	135.89	134.24	1.2
		Standard—C40-Q	67.35	35.56	14.89	(—)6.70	111.10	118.72	6.4
		Premier-C40-Q	72.53	34.95	14.82	(—)7.00	115.30	121.31	4.9
		Bajaj C40-Q	66.99	35.54	14.86	(—)6.70	110.69	119.74	7.6
		Hindustan-C40-Q	67.35	35.40	14·86	(—)6.70	110.91	110.37	(—)0.5
								Average	3.5

CAV Dynamo :							
Telco-GG-55-12V	254.59	113.20	48.85	(—)31.00	385.64	451.69	14.6
Leyland GG-55-24V.	249.36	104.65	45.31	(—)32.00	367.32	387.00	5.1
				Average			10.2
Regulator:							
3 GC . .	16.39	12.61	5.41	(—)1.40	33.01	34.76, 35.89, 33.38	31.38, 32.80, & 34.87
Hybrid . .	32.12	9.61	4.92	(—)4.00	42.65	54.00	21.0
Head Lamp :							
Hindustan/Ambassador 26957003	21.30	6.89	3.50	(—)1.30	30.39	31.98	5.0
Bedford-26057002	28.44	7.72	4.18	(—)2.40	37.94	41.41	8.4
Leyland-51477	30.06	7.84	4.32	(—)2.40	39.82	42.73	6.8
Fiat-2695 7005	21.25	6.80	3.47	(—)1.30	30.22	32.40	6.7
Fargo-2695 7006	29.99	7.66	4.30	(—)2.40	39.55	43.66	9.4
Standard 1 Ton/ Bajaj 51336	29.59	7.70	4.28	(—)2.40	39.17	43.35	9.6
Herald 2605 7005	20.63	6.78	3.42	(—)1.30	29.53	34.10	13.4
Jeep 5405 2506	30.50	7.60	4.34	(—)2.40	40.04	35.37	(—)13.2
				Average			6.0%

TABLE 21—(*Contd.*)

1	2	3	4	5	6	7	8	9	10
1.	*Lucas T.V.S.* —(Contd.)	***Distributor:***							
		Hindustan - 40775-25D4	31.15	17.52	9.32	(—)3.40	54.59	48.66	(—)12.2
		Herald-40914 25D4	30.02	17.16	9.07	(—)3.30	52.95	52.43	(—)1.00
		Standard 1 Ton-41055	30.12	17.19	9.08	(—)3.30	53.09	56.75	6.4
						Average			1.7
		Wiper Motor :							
		Hindustan-5407 1296	57.75	13.39	7.49	(—)7.60	71.03	72.78	2.4
		Standard 1 Ton-5407 1297	52.70	13.19	7.06	(—)6.40	66.55	75.47	11.8
		Jeep . .	51.73	13.00	6.95	(—)5.80	65.88	65.58	(—)0.5
		Telco . .	62.43	13.96	7.91	(—)7.10	77.20	80.00	3.5
		Herald/Bajaj .	51.23	12.96	6.94	(—)6.70	64.43	76.61	15.9
						Average			6.87

2. *Globe Auto Electricals*	Voltage Regulator, IR-19D	22.48	8·57	3.27	..	34.32	..	..
	Ignition Switch-Q 166A	9.83	0.98	0.90	..	11.71	9.75	(–)20.1
	Ignition Coil :							
	BE 100A .	16.10	3.86	1.55	..	21.51	..	..
	BE 200B .	16.52	3.84	1.58	..	21.94	18·50	(—)18.6
	BE 200 BH .	17.94	3.91	1.69	..	23.54	13.75	(–)71·2
	BM 200A .	16.05	3.82	1.55	..	21·42	22.90	6.5
						66.90	55.15	(–)21.3%
	BZ 200A .	19.65	3.89	1.82	..	25·36	..	..
	Ignition Distributor-586B	34.13	20·16	7.03	..	61.32	43.60	(—)40.6
	Wiper Motors :							
	TGE 54/G-Car	56.80	24·51	8.89	..	90.20	61.90	(—)45.7
	TGE 543/B .	34.06	17.51	5.47	..	57.04	..	..
	TGE 543/S .	34·43	17.58	5.50	..	57.51	63·50	9.4
	TGE 544/T .	40.89	17.23	5.96	..	64.08	43.75	(—)46.5
	TGE 543/NP .	34.90	17.49	5·53	..	57.92	..	..

TABLE 21—(*Contd.*)

1	2	3	4	5	6	7	8	9	10
2.	*Globe Auto Electricals* —(Contd.)	TGE 543/NT .	34.69	17.46	5.51	..	57.66	..	..
		TGE 543/KD	34·33	17·50	5.49	..	57.32	51.50	11.3
		TGE 543/WJ .	33.96	17.46	5.46	..	56.88	46.50	(—)22.3
						Average			(—)22.0
		Alternator:							
		ALE 5101 .	117.21	26.03	12·86	..	156.10	185.25	15.7
		ALK 5101 .	99.21	26.37	11.92	..	137.50	153.00	10.1
						Average			13.2%
		Generator-GGW-7404	117.98	40.37	22.05	..	180.40	..	..
		Starting Motor :							
		MCH 6215 .	206.40	25·08	20.02	..	251.50	..	..
		MDU 6018 .	125.54	43.22	20·76	..	189.52	154.75	(—)22.5
		MDU 7013 .	131.17	43.85	21.60	..	196·62	160.85	(—)22.2
						Average			(—)22·3%

24.6.3. **Fair prices for Dynamo, Starter, Head Lamp etc.**—Two companies were selected for costing of these items but the products made at these two units are of different specifications though the nomenclatures are the same. For the purpose of assessment of the reasonableness or otherwise of the current selling prices, we have taken each item produced by either Company as a separate product.

24.6.4. Lucas T.V.S.—The gross profit for Lucas T.V.S. during the costing period was about 16% on the capital employed and in the estimate, we have provided a return of 15% on the capital employed. On the estimated volume of production in future, the total quantum of return could go up and might warrant a reduction in the price.

24.6.4.1. *Starters.*—The surplus margins available in the existing selling prices of C.A.V. Starters compared to our estimated ranges averaged about 15 per cent for Lucas T.V.S. For Lucas starters these average about 12 per cent. There is, therefore, a case for some price reduction on an overall basis. On cars, these are marginal. Since truck prices are not controlled, it would appear anomalous to impose a reduction on an ancillary supply for trucks.

24.6.4.2. *Dynamos.*—The surplus margins average about 10 per cent on the existing selling prices. These also mostly relate to heavy vehicles.

24.6.4.3. *Regulators.*—This is a small item and the selling prices may not be viewed as excessive compared to those of other large items going into the structure of truck prices.

24.6.4.4. *Head lamp, distributor, Wiper Motor.*—The current selling prices appear to vary by about 5 per cent and may be viewed as nominal.

24.6.5. **Globe Auto.**—Except that of alternators, the current selling prices of all their other products are considerably lower than our estimates. By and large the oveall profitability is not encouraging.

24.7. Propeller shafts

24.7.1. **Ex-Cell-O-India Ltd.**—The Company was established in 1958 and has been so far manufacturing the propeller shafts only and has taken up the production of steering gear and axle shafts on a limited scale recently which will turn into regular production with the installation of the requisite mechinary, availability of regular supply of raw materials and also forged parts. The other activities of the Company consist of the manufacture of different kinds of machines and machine spares required by the engineering industry, the capacity of which is also likely to expand in future. The paid-up capital of the Company as at 30th November 1965 stood at Rs. 20.0 lakhs and the sales turnover during previous two years *i.e.* 1963-64 and 1964-65 were Rs. 142.70 lakhs and Rs. 140.47 lakhs respectively. There was a substantial increase in sales in 1963-64 compared with that in the previous year but subsequently this dropped down. The gross profit (*i.e.* profit subject to taxation, interest, bonus and other items of expenses and income not pertaining to the manufacturing activities) amounted to Rs. 19.03 lakhs and Rs. 18.56 lakhs during the corresponding years which represented 13.34% and 13.21% on sales turnover and 21.8% and 19.2% on capital employed. The Company entered into an Agreement with M/s. Birfield Ltd. of England for the supply of technical know-how in regard to the manufacture of Hook-type Universal joints and driving shafts and according to the terms of the agreement, royalties are payable at 3% on the ex-works selling price of the articles after deducting therefrom the value of goods supplied by foreign collaborator. For steering gear and certain types of axle shafts, there are other agreements with M/s. Ross Gear & Tool Co., Inc. of Switzerland and Gelenkwellontain of West Germany. For the manufacture of machines and machine tools the Company has a collaboration agreement with M/s. Ex-Cell-O Corporation of U.S.A. who participates with 80% in the share capital of the Company in addition to royalty. The accounts of the Company (unaudited accounts) for the six months period ending on 30th May 1966 were adopted for our study. The licenced capacity for the manufacture of shafts on a single shift basis is two lakh units per annum but the installed capacity is stated to be one lakh units per annum on the assembly line. The machine shop has to work double shift generally due to the existance of an imbalance in the capacities. The total production of shafts during 1964-65 and during the first six months of 1965-66 was 63,163 nos. and 36,626 nos. respectively resulting in utilisation of 63% and 73% respectively of the capacity. Having considered the Company's expansion programme and the likely demand in the main automobile manufacture, the production at this unit has been taken at 1.25 lakh units per annum for future. Return has been calculated at 15% on capital employed and working capital for this purpose is taken at 4.5 months' cost of production. The estimates of fair selling prices worked out by us are shown in table 22.

24.7.2. In the case of propeller shafts, the current selling prices of the Company are higher than our estimates of fair prices in respect of three items, marginally higher in eight items and inadequate in seven items. The Company's production is far lower than the capacity and further the demand is also limited.

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TABLE 22

Commission's Estimate of Fair Price of Propeller Shafts

Name of the Company	Particulars	Material Cost	Above material cost	Return	Fair Selling price	Current Selling price	Margin as % of current price
		Rs.	Rs.	Rs.	Rs.	Rs.	
1	2	3	4	5	6	7	8
Ex-Cell-O India Etd.:							
	Leyland-118″ W.B.RR .	250.31	68.58	21.76	340.65	321.00	(—)6.1
	Leyland-210″ W.B. FR .	271.72	75.18	23.77	370.67	345.00	(—)7.4
	Leyland-210″ W.B. RR .	298.64	78.52	25.42	402.58	383.00	(—)5.1
	Jeep-FR	58.48	36.02	8.32	102.82	102.00	(—)0.8
	Jeep-RR . . .	68.11	37.65	8.93	114.69	122.00	6.0
	Jeep FC 150 FR . .	58.98	36.25	8.36	103.59	107.00	3.2
	Jeep FC 150 RR . .	57.20	36.52	8.28	102.00	115.00	11.3
	Standard Herald . .	73.09	26.90	7.40	107.39	130.00	17.4

Standard-20 One Ton .	79.85	41.05	10.00	130.90	155.00	15.5
Hind Motor-Ambassador .	71.48	37.14	9.09	117.71	122.00	4.5
Bedford J 4LtFR . .	171.01	55.23	16.22	242.46	234.00	3.6
Bedford J 4L-RR . .	245.11	70.86	21.84	337.81	358.00	2.9
Bedford J 4E-RR . .	297.28	76.82	25.01	399.11	408.00	2.2
Bedford J 4S-FR . .	147.36	46.45	13.73	207.54	222.00	6.5
Bedford J 4S-RR . .	236.46	69.97	21.32	327.75	343.00	4.4
Leyland 176" W.B.FR .	185.41	67.74	18.91	272.06	242.00	(—)12.4
Leyland 176"&163" W.B.RR	251.76	73.77	22.61	348.14	352.00	1.1
Leyland 163" W.B. FR .	177.30	64.61	18.05	259.96	233.00	(—)11.6

24.8. **Brake Assemblies**

24.8.1. **Brakes (India) Ltd.**—Registered in November 1962, the Company went into commercial production in January 1964. Initially assembly of Leyland Hydraulic Brakes only was taken up from components supplied by its customers but subsequently it diversified its production in a progressive manner for other types of vehicles and at present several components are manufactured by deletions in imports of such components in the brake assembly. The Company has entered into a collaboration Agreement for a period of 10 years from January 1964 with M/s. Joseph Lucas (Industries) Ltd., U.K. which provides for participation in the equity capital upto 49 per cent and providing technical know-how by its foreign subsidiary, *viz.*, M/s. Girling Ltd., U.K. The technical service fees and royalty are 1½% and 2% respectively on the net annual ex-factory cost of products manufactured indigenously. We have adopted the accounts for the year ending December 1965, for the purpose of costings. The annual licensed capacity is for a production of 96,000 brake sets (*i.e.* 4 nos. or 2 nos. as the case may be for a set) which may vary depending upon the pattern of product-mix. The actual production of brake sets during 1966 and six months of 1967 was 1,02,144 nos. and 83,002 nos. or in terms of equated brake sets 25,870 sets and 21,358 sets respectively which formed about 27% and 44% of the capacity utilisation. The best performance achieved was during the half yearly period from January to June 1967. During the period the Company achieved maximum deletions in imported components and developed indigenous production of such components. Its paid-up capital for the year ended 31st December 1966 stood at Rs. 165.30 lakhs. It was during 1964 that commercial production on certain lines was stabilised and there was a small sale. The sales improved rapidly from year to year and came to Rs. 210 lakhs in 1966. Though the sales volume increased from year to year, the position was not happy in respect of profits and the cumulative loss as at the end of 1966 was Rs. 142 lakhs. The operating loss in 1966 was lowest being only Rs. 3.6 lakhs before charging development rebate, interest, exchange loss, etc. The losses in earlier years were due to under utilisation of capacity and in 1966 there could have been a small margin of profit but for the devaluation of the rupee, which resulted in pushing up the prices of imported materials whereas the selling prices were not altered adequately to cover this. With the increase in production in future and with further diversification of products the position of profitability is likely to improve in future. The production at this unit has been estimated at 86,180 sets per annum based on 90% utilisation of capacity. This includes brakes for tractors, trailers etc. plus spare sales at ten per cent. Return has been provided at 15% on capital employed and working capital in the capital employed has been calculated at six months' cost of production. Our estimates of fair selling prices for the unit are shown in table 23.

24.8.2. **Automobile Products of India Ltd.**—The position regarding the paid-up capital and trading results of this Company have been discussed earlier in the para relating to clutch assembly wherein brief particulars in regard to its activities for the manufacture of brake assembly are stated. For the manufacture of brake assembly the Company has entered into an Agreement with three foreign collaborators. They are (1) Automotive Products Co. Ltd., England under trade name "Lockheed", (2) Fiat S. P. A., Italy under trade name Fiat, and (3) Alfred Teves, West Germany under trade name ATE. The Lockheed brakes are used as Original Equipment in the Hindustan Ambassador and Bajaj 3 wheeler trucks. The licensed capacity for the manufacture of brake assemblies is 32,000 brake sets on double shift basis against which the production for the year ending 31st July 1966 was 20,208 sets. The average production per annum for brake assembly has bees adopted at 57,700 sets per annum. Return has been calculated at 15% on the capital employed and the working capital has been taken at six months' cost of production. Normally brakes are sold under ex-works terms but in the case of Hindusthan Ambassador Car, Bedford, Leyland and TMB trucks the quotation includes other charges for secondary packing, freight, handling and transit insurance. Our estimates of fair selling prices represent ex-works prices which have been shown in table 23.

TABLE 23

Commission's Estimate of Fair Price of Brake Assemblies

Name of the Company	Particulars	Material cost	Above Material cost	Return	Adjustment for Sterling devaluation	Fair selling price	Current selling price	Margin as % of Current price
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
1	2	3	4	5	6	7	8	9
Automobile products of India Ltd.	Fiat	135.76	76.47	29.45	..	241.68	195.15	(—)23.8
	Hindustan Ambassador .	197.55	59.68	28.25	..	285.48	202.07	(—)41.3
	Bajaj 3 Wheeler . .	152.37	36.85	20.67	..	209.89	226.88	8.4
Brakes India Ltd.	Willy's Jeep . . .	159.74	136.79	44.89	(—)5.61	334.81	337.88	0.9
	Hindustan Ambassador .	160.33	126.48	43.57	(—)9.28	321.10	240.00	(—)38.8
	Standard Herald . .	187.97	121.31	46.98	(—)14.06	342.20	285.81	(—)19.7
	Standard 20 One Ton .	392.34	145.02	81.62	(—)50.90	568.08	575.80	(—)1.3
	Dodge 5 Ton . . .	852.51	433.00	195.27	(—)70.24	1410.54	1446.00	2.5
	Leyland Commet . .	874.40	535.28	214.13	(—)23.18	1600.63	1804.26	11.3
	Hippo/Beaver (Hydraulic)	49.25	20.86	10.65	(—)04.98	75.77	117.68	35.6
	F. C. 150 (Jeep One Ton)	224.95	183.35	62.02	(—)8.06	462.26	..	..

Benz Hydraulics :							
(a) Type 1210 . .	139.26	114.10	38.49	(—)13.56	278.29	..	.
(b) Type 312 . .	121.20	105.56	34.44	(—)10.97	250.23	..	..
Tendum Master Cylinder Bedford	68.64	72.40	21.42	(—)8.50	153.96	129.54	(—)18.9

24.8.3. *Fair prices for Brake Sets.*—Out of the brake sets manufactured by these two units, the common item of manufacture is only the brake set for Ambassador Car. The estimate of fair selling prices of Ambassador Car brake set in respect of Brakes India Ltd. is higher than that of the other unit by Rs. 35.62. The current sale price of this item in case of Brakes India Ltd. is higher by Rs. 37.93 or in other words their cost differential more or less corresponds to the differential in the selling prices. Compared to the fair ex-works prices estimated by us an increase in prices for the brake sets for Fiat, Ambassador, Standard Herald cars and for Tandem Master Cylinder for Bedford would be warranted whereas in other items there is scope for some price reduction. It may be observed that the prices of passenger car brake sets are very unremunerative and entail the Companies to a large quantum of losses which will be more or less offset by the higher prices in the brake sets of large vehicles which are decontrolled.

24.9. Servo-Equipment, Air Brakes and Compressors

24.9.1. **Sundaram Clayton Ltd.**—Established in 1962 with an initial paid-up capital of Rs. 45.6 lakhs, the production and sale at this Company commenced in 1964-65. The volume of sales was not satisfactory due to initial teething troubles when the factory was first commissioned into production. Till 1965-66, no profits were earned, but on the contrary there had been an accumulated loss of about Rs. 47 lakhs. However, the production stepped up considerably in 1966-67, when it was in a position to wipe off its past losses. It is strikingly revealed that even though the capacity utilised was about 2/3rd, a gross profit of about Rs. 60.7 lakhs could be earned. The Company's profitability, therefore, should improve substantially with maximum utilisation of capacity in future. The position in respect of costs and profitability is encouraging in this unit. We have adopted the period ending 31st July 1967 for the purpose of costing. The Company produces compressor sets, servo sets and complete air braking systems for the various models of diesel trucks and heavy duty vehicles only. These equipments are not meant to be used in passenger cars or petrol trucks. No other

Company in this country produces these items, and, therefore, we could hardly attempt at any cost comparison. The ranges catered are for Bedford, Dodge, Tata Benz, Comet Beaver, Hippo, Tiger and Titan vehicles. The production attained in 1966-67 was the highest so far *viz.* about 22,035 sets of all types. The Company concluded in July 1962 an agreement with Clayton Dewandre Company Ltd., U.K., a wholly owned subsidiary of Clayton Dewandre, Holdings, Ltd. whereby M/s. Clayton Dewandre Company Ltd. will provide technical assistance to the Company in the manufacture of air-assist brakes for automotive and non-automotive vehicles. In 1964 the Company had concluded another agreement with M/s. Bendix Westing-house Automotive Air Brake Company, U.S.A. whereby the Company was granted a non-exclusive and non-transferable licence to manufacture compressed air equipment for automotive vehicles and for industrial equipments. Both the agreements continue in force for a period of 10 years in the first instance. On the basis of agreement with Clayton, the collaborator would participate in the equity share capital to a maximum of 49% of shares and the capital contribution would be in the form of plant and machinery, and the shares allotted to them as on September 1967 totalled Rs. 38.85 lakhs. The collaborators are entitled to 1½% technical service fees and 2% royalty calculated on the factory cost of products manufactured (excluding their own supply of component subject to Indian Taxes). According to the agreement with the Bendix Westinghouse, the Company has to pay 5% of gross receipts for all sales of compressed air equipment or parts thereof (less cost of components supplied by them) as technical assistance fees. The lincensed capacity of this factory is stated to be for 96,000 of air brake systems depending on a pattern of certain 'product mix'. The plant and machinery installed at present are for a maximum production of only 43,400 complete sets with reference to the pattern of production in 1966-67 on a double shift basis, with minor additions to balance this production level. In our estimate we have recognised the existing plant capacity operated on an optimum efficiency *viz.*, 90% of the plant capacity for a set pattern of product mix. The estimated costs for future have, therefore been based on this efficiency and the production has been taken at 28,380 complete equipments sets and 16,200 servos and compressor sets in the estimate. The working results during 1966-67 showed a gross margin of about 46.4% on costs which is equivalent to about 26% on the capital employed. The position in regard to future is likely to improve the profitability after taking into account the variations in respect of material costs and expenses for the estimated volume of production. For determining fair selling prices for future, return has been provided at 15% on the capital employed and working capital in the capital employed has been taken at six months' cost of production. The fair selling prices thus worked out are shown in table 24.

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TABLE 24

Commission's Estimate of Fair price of Servo-Equipment, Air brake & Compressor

Name of the Company	Particulars	Material Cost	Above Material cost	Return	Adjustment for sterling devaluation	Fair Selling price	Current Selling price to O.E.	Margin as % of current price
1	2	3	4	5	6	7	8	9
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
Sundaram Clayton Ltd.	*Full Equipment Sets:*							
	Benz Trucks . . .	195.00	132.17	43.14	(—)10.84	359.47	457.00	21.3
	Leyland Commet Tractor	1054.04	459.12	197.14	(—)28.92	1681.38	2128.00	21.0
	Leyland Commet-Truck .	827.12	428.06	164.30	(—)23.27	1396.21	1760.00	20.7
	Leyland Titan-Truck .	1144.78	337.93	193.71	(—)61.54	1614.88	..	..
	Compressors Sets:							
	P.6/354-Simpson Engine .	117.71	117.89	30.95	(—)1.88	264.67	337.87	21.7
	Bedford J 6 . . .	129.59	121.29	32.99	(—)2.44	281.43	357.45	21.3
	Servos Sets :							
	Dodge Truck FC ML 4 .	198.48	158.05	46.93	(—)7.39	396.07	520.62	23.9
	Dodge Truck FC ML 21	220.71	181.64	52.43	(—)4.81	449.97	611.48	26.4
	Bedford J6 . . .	198.15	158.97	46.91	(—)7.17	396.86	530.50	25.2

24.9.2. **Fair Original Equipment prices for Air brake Equipment, Servo and Compressor Sets.**—The surplus margin available in the existing prices over those estimated average about 22.0%. Since the products produced at this Company are for large type commercial vehicles which are not controlled, it would appear inappropriate to impose a price reduction in an ancillary which caters to the demand of vehicles for which there is no price control. It would have been reasonable if high prices were earned on passenger cars, but this Company does not produce any item for these types. However, we are of the opinion that the Company may be advised to reduce their prices as their overall profitability is likely to improve in future.

24.10. Road wheels

There are two producers of wheels in the country, viz. Wheels India Ltd., Madras and Sankey Wheels Ltd., Calcutta and the costs of these units are discussed below:

24.10.1. **Wheels India Ltd.**—This company was incorporated in 1960 and started the production of Commercial vehicles wheels in April, 1962. It has technical collaboration with Dunlop Rim & Wheels Company Ltd., London under an Agreement entered into in 1960 for a period of 20 years. In consideration for the services of the English Company, Wheels India would pay a consolidated fee at 2% of the total cost of production in respect of the manufacture of equipment covered by the licences subject to deduction of taxes. The paid-up capital of the Company as on 31st December 1965 stood at Rs. 93.81 lakhs and the gross profit (before charging interest, bonus, Directors' Commission, prior period expenses, etc.) amounted to Rs. 88.88 lakhs which represented about 37.28% of its capital employed during 1965. The dividends declared on equity shares during 1964 and 1965 were 25% and 16% respectively. This is indicative of its good trading results during these years when its margin of return was also high. The audited accounts for the year ending December 1965 were adopted for the purpose of costing. The company was initially granted a licence for the manufacture of 180,000 commercial vehicle wheels (on two shifts basis) and thereafter applied to Government for permission to manufacture at least 2 lakhs passenger cars, wheels including animal-drawn vehicle-wheels. It has since been granted a licence to manufacture one lakh passenger car wheels but this should be within the total capacity of 320,000 commercial vehicles wheels and tractor wheels. The Company has since stabilised the manufacture of commercial vehicle wheels and the prototype in respect of the tractor and passenger car wheels were being developed. The production of wheels for commercial vehicles during the costed period viz., year ended 31-12-1965 was 2.72 lakh nos. The production for future has been taken at 2.0 lakhs for commercial vehicles and 1.15 lakhs for passenger cars (including tractor front wheels). Since the wheels for passenger cars and tractors were not in production during the costed period, no cost data relating to actuals was available. As these items will be manufacture in future, estimates have been drawn up for these items also. The Company submitted standards for manufacturing time and materials for the car wheels and tractor wheels. These standards might undergo certain changes when the actual commercial production takes place and it is not possible at this stage to forecast with any degree of accuracy such variations; such standards, as furnished by the Company, have, however, been adopted in developing the estimates of costs after providing for a reasonable percentage of rejections in direct materials. The wastage provided is about 6%. The working capital has been taken at 5 months' cost of production and return has been provided at 15% on capital employed. The fair selling prices estimated for this company are shown for the different types of wheels in table 25. The estimates for passengers car wheels and tractor wheels are just estimated based on standards furnished by the Company. From the data given in the table 25 it would appear that in four cases the present ex-factory prices are 16.5 to 20.2% higher than the estimated fair prices f.o.r. Madras/ Dhanbad; in six cases these are 9.8 to 14.1% higher and in four cases the range is from 1.9% to 9.3%. By and large, the present prices are about 13% higher adopting a weighted average.

24.10.2. **Sankey Wheels Ltd.**—This is a public limited company established in November 1962, which manufactures road wheels (both for commercial vehicle and for passenger cars). It has a plan to manufacture tractor wheels for which machinery is under installation. The major portion of the plant for car wheels was acquired from Guest Keen Williams Ltd. along with all tools, tooling, processed components of the car wheels etc. Production of truck and car wheels commenced in 1964 and 1965 respectively. The subscribed capital of the Company as on 31st December 1965 amounted was Rs. 169.98 lakhs. An Agreement with the foreign collaborator viz., Joseph Sankey and Sons, U.K. has been entered into for a period of ten years from 1963. In consideration for the rights and technical assistance granted by the foreign collaborator, the Company has allotted to it shares of about Rs. 17 lakhs. From its inception and upto the end of 1965, the Company was running on losses and the cumulative loss by 1965 end was Rs. 32.89 lakhs. It expects to improve its position in future. The unaudited accounts for seven months period from 2-1-1966 to 31-7-1966 were adopted for costing. The installed capacity of the Company (on single shift basis is estimated at approximately 3,50,000 wheels of all types and the actual production of all types during 1965 and for the first seven months in 1966 was 3.33 lakhs and 1.66 lakhs respectively indicating an utilisation of about 95% of its capacity in 1965. By and large during this period the truck wheels machines worked single shift whereas the car wheel machines worked double shifts. The estimate at this unit for future is taken at 2 lakhs commercial vehicle wheels which include 0.26 lakhs tractor rear wheels and 2.35 lakhs passenger car wheels (inclusive of tractor front wheels). At the time of cost study the manufacture of tractor wheels was not taken up as the plant was not yet installed. Further, standards for the usage of material and manufacturing time were also not developed for the tractor wheels. In the absence of data, the fair selling prices for tractor wheels were not attempted. However, this item has been recognised for separation of expenses relating to other wheels. The working capital has been provided at 4½ months' cost of production and return has been provided at 15% on the capital employed in the estimates. The fair selling prices estimated at this unit in respect of different types of truck and car wheels are indicated in table 25.

TABLE 25

Commission's Estimate of Fair Price for Wheels

Sl. No.	Name of the Company	Particulars	Material cost	Above meterial cost	Return	Adjustment for Sterling Devaluation	Fair Selling Prices	Current Selling Prices	Margin as % of Current Price
1	2	3	4	5	6	7	8	9	10
			Rs.		Rs.	Rs.	Rs.	Rs.	Rs.
1.	*Wheel (India) Ltd.*	*Passenger Car Wheels:*							
		(a) Ambassador . .	15.58	18.70	6.93	(—)1.92	39.29	..	..
		(b) Willy's Jeep . .	17.58	18.81	7.04	(—)2.08	41.35	..	..
		(c) Standard Herald .	12.85	18.59	6.78	(—)1.59	36.63	..	..
		(d) Fiat. . . .	15.43	18.69	6.92	(—)1.94	39.10	* ..	..
		(e) Bajaj Viking . .	19.72	18.83	7.16	(—)2.46	43.25	..	..
		(f) Standard One Ton .	25.70	19.07	7.50	( )3.40	48.87	..	..
		(g) Willy's Forward .	17.76	18.76	7.02	(—)2.11	41.43	..	..

*Production has not been taken up on Commercial Scale and current selling prices have not been fixed.

TABLE 25—(*Contd.*)

1	2	3	4	5	6	7	8	9	10
		Commercial Vehicle Wheels:							
		(a) Leyland-Commet .	110.29	27.52	14.53	(–)8.00	144.34	162.75	11.3
		(b) Leyland-Beaver .	125.15	31.73	16.62	(–)9.20	164.30	202.29	18.8
		(c) Mercedez benz-6.5 .	103.57	24.33	13.01	(–)8.09	132.82	151.46	12.3
		(d) Mercedez Benz-7.0 .	107.36	29.56	14.92	(–)8.25	143.59	158.32	9.3
		(e) Bedford 6.5 (J-4) .	72.92	20.40	10.16	(–)4.68	98.80	115.00	14.1
		(f) Bedford—J-6 . .	103.57	28.75	14.72	(–)8.09	138.95	154.00	9.8
		(g) Dodge . . .	90.51	23.46	12.11	(–)6.05	120.03	143.50	16.4
2.	*Sankey Wheels Ltd.* :	*Passenger Car Wheels:*							
		(a) Ambassador 4J X 15L	14.74	8.00	3.57	(–)0.07	26.24	29.99	12.5
		(b) Jeep 4.50 X 16 .	17.44	7.68	3.52	(–)0.07	28.57	29.13	1.9
		(c) Fiat 3.50 X 14 .	14.25	8.29	3.64	(–)0.06	26.12	28.00	8.7
		(d) Standard 3.50 X 13 .	11.63	8.57	3.32	(–)0.05	23.47	29.40	20.2

Commercial Vehicle Wheels :

(a) Benz B-7.0 X 20 HD	114.41	33.37	16.39	(–)7.72	156.45	161.60	3.2
(b) Benz Bedford-J6 B-6.5 X 20 HD.	112.90	33.27	16.30	(–)7.50	154.97	155.05	..
(c) Dodge (Premier) B-6.5 X 20 HD	86.15	27.56	13.47	(–)6.01	121.17	145.05	16.5
(d) Bedford B-6.0 X 20 HD	77.36	28.82	13.55	(–)5.21	114.52	111.50	(–)2.7
(e) Leyland B-6.5 X 20 HD	97.01	33.24	15.41	(–)7.95	137.71	156.50	12.0
				AVERAGE	..	..	7%

24.10.3. Comparison of estimated prices between the two producers

24.10.3.1. *Passenger car wheels.*—The estimates of costs prepared for passeger car wheels at Wheels (India) Ltd. on the basis of standards submitted by the Company cannot be viewed as realistic unless authentic cost data are available and the production on a commercial scale takes place. On a comparison of the costs with Sankey's it may be observed that although there exists a little disparity in the material costs, the conversion costs based on standards for Wheels (India) are higher than those of Sankey's. With stabilisation of production, the manufacturing time of Wheels (India) is likely to come down thereby resulting in lower costs. In the circumstances Sankey's costs for passenger car wheels would appear to be fair ones for the industry. The surplus margin between the existing selling prices at Sankey's over the fair prices determined by us ranges between 1.9% in case of Willy's Jeep to 20% in case of Standard Herald.

24.10.3.2. *Commercial vehicle wheels.*—In case of commercial vehicles wheels, the costs of materials and the conversion charges for comparable types of wheels manufactured by Sankey's are to a small extent higher than those of Wheels (India) which cannot be termed as abnormal in most cases, except for Leyland wheel, where the costs of materials in respect of former are lower due to the use of indigenous plates in the manufacture of discs. Although an average of the two costs of similar wheels may normally be deemed as fair to the industry which would also serve as a guide to adjust the current prices of other wheels, we do not propose to adopt a figure based on average owing to weighty reasons. The existing selling prices for similar wheels for both the manufacturers differ only marginally. The difference between the existing selling prices and fair prices determined by us are higher in the case of Wheels (India) but in case of Sankey the margin is nominal except for one item. A fair price based on average of two costs will tend to reduce the margin for both the manufacturers. Such a course will adversely affect Sankey's profitability and also the profitability of Wheels (India) which is yet to stabilise its production of passenger car wheels.

24.10.3.3. We, therefore, consider that as the prices of both these producers are not substantially different and that as Sankey accumulated losses in the past, the prices at Sankey may be adopted as fair ones for the industry as a whole without any change from the ruling levels at present.

24.11. **Automobile Safety Glass**

24.11.1. **Hindustan Safety Glass Works Pvt. Ltd.**—This is a private limited company registered in 1953 and the share capital of the company as at 31st March 1965 was Rs. 12.00 lakhs. The activities of the company consist of manufacture of flat and curved toughened glasses, flat and curved laminated glass sheets, silvered glass and bevelled glasses. The sales turnover during 1963-64, 1964-65 and 1965-66 amounted to Rs. 62.86 lakhs, Rs. 64.02 lakhs and Rs. 70.01 lakhs respectively and the gross margins (before taxation, interest bonus, managing director's remuneration) amounted to Rs. 7.01 lakhs and Rs. 8.7 lakhs during 1963-64 and 1964-65 respectively which represented 11.2% and 13.6% on sales turnover and 25.3% and 28.0% on capital employed. The printed accounts for 1965-66 being not still received, the corresponding percentages have not been calculated. The unaudited accounts for the year ending 31st March 1966 have been examined. The business of the Company and the quantum of profits increased progressively from year to year. The factory is broadly divided under four manufacturing divisions e.g. division for manufacturing flat toughened glasses, division for manufacturing curved toughened glasses, division for manufacturing laminated glasses both flat and curved and division for silvering and bevelling. The safety glasses supplied to the automobile manufacturers are both of the flat and curved types. The door glasses and vents are flat glasses whereas the windscreen and backlights are curved. In certain commercial vehicles however flat windscreens are used. The automobile manufacturers now use mostly toughened safety glasses only. In the division for the manufacture of flat toughened glasses, safety glasses of numerous sizes and dimensions of commercial use are manufactured along with the automobile glasses. The production data maintained by the Company was only in terms of area from which it was not possible to determine how many pieces of the different types of automobile glasses were manufactured nor any separate record was available showing the production of flat toughened glasses in terms of area for automobile. The number of pieces and area manufactured in respect of automobile glasses being required for the cost calculation, our Cost Accounts Officer developed approximately correct production figures in consultation with the Company from sales statistics. In case of curved toughened glasses although the total area manufactured was separately kept for the automobile glasses analysis of pieces product-wise was not available. The number of pieces manufactured had, therefore, to be developed theoretically from the sales records. The glasses used during the actual period were mostly sheet glasses procured from indigenous sources. The wastages were very high. Since in the manufacture of safety glasses for automobiles practically flawless glasses are to be used considerable rejection takes place at the sorting stage specially in the case of glasses used for windshields and back lights. Though data necessary for cost accounting is not maintained by the Company, it is interesting to note that the company has been developed by indigenous technical and engineering skill without any foreign collaboration. Certain other manufacturers of safety glasses are in the field and some others are also likely to start manufacture shortly. The unit represented that with the advent of new competitors in the field their share of supplies to the automobile manufacturers would decrease. In the absence of definite knowledge of the installed capacities of the new units, it would be difficult to visualise the extent of its supplies to the main automobile manufacturers. Judging all relevant aspects the Commission decided that the volume of production of this unit would be adopted at the same level as for the actual period plus a small increase. The production estimated for this unit for future, so far as automobile glasses are concerned, is 36.09 thousand square meters for flat toughened glasses and 7.46 thousand square meters for curved thoughened glasses. The Company informed the Commission that the industry was recently included in the priority list of industries and that it expected to get licence to import enough polished plate glasses for the manufacture of automobile windscreens. In the determination of the cost of glasses for windscreen in our estimates, the imported polished plate glasses have been considered and the indigenous sheet glasses have been considered for all other automobile safety glasses. Return is taken at 15% on capital employed and working capital in the capital employed at 3½ months' cost of production. The estimates of fair prices worked out by us are indicated in table 26.

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TABLE 26

Commission's Estimate of Fair Price of Automobile Safety Glasses

Name of the Company	Particulars	Material Cost	Above material cost	Return	Fair Selling Price	Current Selling Price	Margin as % of Current Price
1	2	3	4	5	6	7	8
		Rs.	Rs.	Rs.	Rs.	Rs.	
Hindustan Safety Glass Works Pvt. Ltd.	*Ambassador:*						
	Rear Door . . .	5.30	3.39	0.74	9.43	33.55	28.4
	Front Door . . .	4.71	3.34	0.70	8.75		
	Rear Ventilator . .	1.33	1.74	0.33	3.40		
	Front Ventilator . .	0.85	1.34	0.25	2.44		
	Fiat :						
	Rear Door . . .	8.05	4.13	1.00	13.18	15.05	12.4
	Front Door . . .	4.21	2.82	0.61	7.64	10.10	24.4
	Ventilator . . .	0.87	1.84	0.32	3.03	4.50	32.7

Herald :						
Rear Door	8.01	4.27	1.01	13.29	..	..
Front Door	8.40	4.34	1.02	13.76	16.80	18.1
Ventilator	1.05	1.56	0.29	2.90	4.53	36.0
Benz-Windshield.	35.15	7.51	2.89	45.55	53.66	15.1
Dodge-Windshield 16877	36.54	7.51	2.95	47.00	..	..
Windscreen :						
Bedford	105.17	23.45	12.46	141.08	..	..
Ambassador	91.28	17.99	10.12	119.39	..	..
Fiat	66.32	16.39	8.43	91.14	..	..
Herald	68.15	16.53	8.53	93.21	..	..
Back Lights :						
Herald	16.57	13.97	5.20	35.74	60.00	40.4
Ambassador	16.57	13.97	5.20	35.74	42.60	16.1
Fiat	36.97	22.25	8.86	68.08	82.00	17.0

24.11.2. **Fair prices for Safety Glasses.**—The gross profit earned by the Company in relation to capital employed during 1964-65 was 28.0% which may be termed as very good. The gross profit on the sale of the automobile glasses cannot be separately determined in relation to its employed capital due to the lack of separate data but it can reasonably be assumed that the profit derived out of the sale of the automobile glasses was also profitable. The margin available in the current selling prices over the fair prices determined by us ranges between 12% to 40% in respect of those items for which current prices were made available to us. In the calculation of the estimate for windshields we have adopted the rates of imported polished plate glasses. The Company did not indicate the prices of windshields which are at present manufactured out of imported glasses. In these cases the estimates of prices determined by us may be regarded as fair to the industry.

24.12. Panel Instruments

24.12.1. **International Instruments Pvt. Ltd.**—Registered in August 1958, the Company went into commercial production in March 1962. The Collaboration Agreement initially for a period of 7 years with M/s. VDO TACHOMETER WERKE ADOLE schindling GmBH West Germany, provides for the manufacture of measuring instruments for road vehicles, such as speedometer, fuel gauges, temperature gauges, oil pressure gauges, ampere meters and techographs (including their respective driving parts and accessories). A lump sum payment for technical know-how of DM 250.000 was made by the Company for the supply of technical know-how; a licence fee of three percent of total turnover of the licensed articles is levied and a further fee of one per cent (free of tax) of the total turnover of the licensed articles is also paid to M/s Instek Zurick under the Agreement. The latter fee is in respect of payment to be made by VDO to Instek Zurick for the licence held by VDO from the same Company. The paid-up capital stood at Rs. 26.27 lakhs on 31-12-1965. The gross margin (before charging interest payment of remuneration to directors, bonus, tax provision and after making adjustment for expenditure and income not relating to production for the year 1965) totalled to Rs. 47.40

lakhs, or about 49 per cent on the capital employed and 38 per cent on sales turnover. The dividend declared on the equity shares was 15 per cent. The accounts for the year ended 31st December 1965 were taken up for cost examination. The installed capacity for this unit is 6.0 lakh pieces of panel instruments, 0.15 lakh pieces of tachograph speed indicators and 10.0 lakh meter cables. As against these, the actual production during 1965 was 3.80 lakh panel instruments, 0.036 lakh pieces tachograph speed indicators and 3.28 lakh meters cables. Besides these, there was also a production of warning lamps of 1.0 lakh pieces. The production of all types instruments for future has been estimated at an annual average of five lakh units. The normal practice of the Company is to quote prices ex-main manufacturers works. The appropriate charges for freight and forwarding have been included in the selling price. Return has been calculated at 15 per cent and the working capital for the purpose has been adopted at six months' cost of production. The fair selling prices f.o.r. destination as determined by us are shown in table 27.

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TABLE 27

Commission's Estimate of Fair Selling Prices for Panel Instruments

Particulars	Material cost	Above material cost	Return	Fair Price f.o.r. destination	Current Selling Price	% of margin on current price
1	2	3	4	5	6	7
	(Rs.)	(Rs.)	(Rs.)	(Rs.)	(Rs.)	(%)
I. International Instruments (P) Ltd. :						
1. *Speedometers:*						
Herald Car	12.98	12.87	4.35	30.20	30.06	(—)0.5
Ambassador Car	12.72	13.01	4.34	30.07	33.31	(+)9.7
Bedford Truck	14.55	13.16	4.48	32.19	32.11	(—)0.3
Fiat Car	13.39	12.47	4.27	30.13	33.96	(+)11.3
Power Wagon Truck Dodge Truck D-300 Truck	14.55	12.96	4.46	31.97	33.37	(+)4.2
Dodge Bus	14.55	12.97	4.47	31.99	34.82	(+)8.1
T M B	11.74	12.85	4.27	28.86	30.07	(+)4.0

Leyland Comet	13.00	12.86	4.35	30.21	33.71	(+)10.4
3 Wheeler	11.81	12.73	4.78	29.32	32.44	(+)9.6
Jeep	15.40	12.62	4.41	32.43	32.72	(+)0.9
2. *Fuel Gauges :*						
Herald Car	22.92	4.84	2.45	30.21	27.93	(−)8.2
Ambassador Car Bedford Truck	22.72	4.77	2.41	29.90	34.86	(+)14.2
Fiat Car	22.83	4.78	2.42	30.03	32.46	(+)7.5
Power Wagon Truck	22.72	4.71	2.40	29.83	33.80	(+)13.3
Dodge Truck	22.72	4.71	2.40	29.83	32.81	(+)9.1
D-300 Truck	22.72	4.71	2.40	29.83	..	..
Dodge Bus	22.72	4.73	2.41	29.86	34.16	(+)12.6
T M B	22.72	4.77	2.41	29.90	34.80	(+)14.1
Jeep	22.66	4.70	2.40	29.76	33.70	(+)11.7
3. *Tank Units :*						
Herald Car	6.15	3.72	1.15	11.02	13.83	(+)20.3
Ambassador Car	6.15	3.87	1.17	11.19	13.80	(+)18.9
Bedford Truck	6.15	3.85	1.15	11.15	12.29	(+) 9.3

TABLE 27—(*Contd.*)

1	2	3	4	5	6	7
Fiat Car	6.15	3.73	1.15	11.03	13.58	(+)18.8
Power Wagon Truck	6.15	3.73	1.15	11.03	12.90	(+)14.5
Dodge Truck	6.15	3.73	1·15	11.03	13.53	(+)18.5
D-300 Truck	6.15	3.73	1.15	11.03	13.90	(+)20.6
Dodge Bus	6.15	3.73	1.15	11.03	13.53	(+)18.5
T M B	6.15	3.89	1.17	11.21	14.21	(+)21.1
Jeep	6.15	3.73	1.15	11.03	13.21	(+)16.5
4. *Temperature Gauges :*						
Bedford Truck	18.18	8.12	2.84	29.14	30.21	(+)3.5
Fiat Car	17.56	8.00	2.81	28.37	31·62	(+)10.3
Power Wagon Truck	15.25	7.54	2.61	25.40	30.15	(+)15.8
Dodge Truck	16.82	7.62	2.70	27.14	34.51	29.4
D-300 Truck	16.82	7.62	2.70	27.14	34.15	28.6
Dodge Bus	16.82	7.64	2.70	27.16	34.51 34.15	(+)21.3 (+)20.5
T M B	19.11	8.23	2.95	30.29	32.29	(+)6.2
Jeep	15.23	8.11	2.89	26.23	28.09	(+)6.6

5. *Air Pressure Gauges :*					
Dodge Truck	9.74	5.16	1.81	16.71	21.59	(+)22.6
Dodge Bus	9.74	5.18	1.81	16.73	21.59	(+)22 5
Leyland Comet	9.74	5.16	1.81	16.71	23.99	(+)30 3
6. *Single Pressure Gauges :*						
Ambassador Car	10.29	5.27	1.83	17.39	20·09	(+)13.4
Power Wagon Truc	10.29	5.27	1.86	17.42	19.04	(+) 8.5
D-300 Truck	10.29	5.27	1.86	17.42	20.00	(+)12.9
T M B	8.29	5.03	1.73	15.05	18.72	(+)19.6
Leyland Comet	10.29	5.27	1.86	17.42	20.35	(+)14.4
Jeep	10.27	5.04	1.77	17.08	20.35	(+)16.1
					Average	14.1
7. *Double Pressure Gauge :*						
T.M.B.	19.49	9.13	3.63	32.25	36.74	(+)12.2
8. *Vacuum Gauges*						
Dodge Truck	10.46	5.28	1.87	17·61	22.62	(+)22.1
Dodge Bus	10.46	5.29	1.87	17.62	22.62	(+)22.1
					Average	22.1
Leyland Comet	10.46	5.28	1.87	17.61	..	..

TABLE 27—(*Contd.*)

1	2	3	4	5	6	7
9. *Ampere Meters :*						
Ambassador Car	7.62	3.94	1.23	12.79	14.61	(+)12.5
Power Wagon Tru	7.62	3.89	1.23	12.74	13.61	(+)6.4
Dodge Truck	7.62	3.89	1.23	12.74	14.21	(+)10.3
D-300 Truck	7.62	3.89	1.23	12.74	14.21	(+)10.3
Dodge Bus	7.62	3.91	1.24	12.77	14.21	(+)10.1
Leyland Comet	7.62	3.88	1.23	12.73	14.76	(+)13.8
					Average	10.6
10. *Warning Lamp Cluster/Warning Lamp Holders :*						
Herald Car	11.15	5.15	1.80	18.10	14.76	(—)22.6
Ambassador Ca	10.24	4.98	1.73	16.95	12.76	(—)32.8
Bedford Truck	10.91	4.84	1.70	17.45	10.71	(—)62.9
Fiat Car	14.55	6.42	2.26	23.23	13.60	(—)70.8
Power Wagon Truck	3.64	1.60	0.57	5.81	3.37	(—)72.4
D-300 Truck	7.27	3.22	1.13	11.62	7.76	(—)49.7
					Average	48.0

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11. *Speedometer Cables :*

Herald Car	2.59	2.54	0.98	6.11	6.13	(+)0.3
Ambassador Car	2.68	2.80	1.05	6.53	8.75	(+)25.4
Bedford Truck	3.47	2.96	1.11	7.54	9.31	(+)19.0
Fiat Car	3.06	2.54	1.00	6.60	6.74	(+)2.1
Power Wagon Truck	4.11	3.95	1.50	9.56	11.27	(+)15.2
Dodge Truck	3.40	3.06	1.17	7.63	8.82	(+)13.5
D-300 Truck	3.01	2.70	1.03	6.74	9.22	(+)26.9
Dodge Bus	4.62	4.19	1.60	10.41	11.81	(+)11.9
T M'B	6.60	5.21	1.96	13.77	14.75	(+)6.6
Leyland Comet	5.11	4.39	1.67	11.17	12.70	(+)12.0
3 Wheeler	2.78	1.98	0.78	5.54	6.85	(+)19.1
Jeep	2.88	2.75	1.04	6.67	7.46	(+)10.6
					Average	13.7

24.12.2. **Fair prices for Panel Instruments.**—It will be observed in table 27 that the Company's current selling prices are higher than our estimates almost in all products excepting warning lamp cluster/warning lamp holders. The available margins in the current selling prices would normally call for certain reductions but before taking such a decision special aspects in regard to the disposals of such products are to be considered. In the case of other ancillary products, the manufacturers are in a position to suffer a loss in regard to their Original Equipment supplies which is finally set off by the surplus margin they earn through their sales in the spare part market but the panel instruments being not much in demand in the spare market, there is hardly any scope for such recovery of higher margin through that source. This aspect has to be borne in mind while determining the prices.

25. Conclusion

25.1. The general practice followed by the Commission in the determination of prices for products in any industry is to take into account a reasonable level of production, consider the levels of expenses and adjust for any abnormalities, provide additional block in order to remove any imbalance so as to achieve the estimated level of production and also provide a reasonable rate of return to cover commitments in respect of interest, bonus, taxation, reserves and reasonable dividends. The prices thus developed for the various industries are considered as fair ex-work prices. Similarly, fair ex-works prices or ex-destination prices have been evolved in the case of products for the automobile ancillaries for certain selected items and these have been discussed earlier. Now it would be of importance to compare such ex-works prices with those ruling at present so as to form conclusions as to whether these prices are reasonable or not. Such a study (detailed earlier in respect of each of the companies) has shown that in most of the units the prices calculated by us based on optimum capacity levels are comparable to those ruling at present and only in a few cases, there occurs a slightly higher margin.

25.2. The above position emerges because of the fact that we have adopted higher levels of production consistent with the capacities in the respective units and these account for economies in costs and reflect extra margins or profit. Such margins in the few cases are also not very high.

25.3. We have considered certain vital points as to whether prices should be fixed for the ancillaries products based on our findings of ex-works prices or not. These are :—

(i) Many of the units are in the nature of small scale units and mostly depend on the automobile manufacturers for placements of orders in large quantities. The general complaint from ancillaries was that they could not have continuous production as the orders were irregular and spasmodic with the result that their production lines could not be continuously fed resulting in uneconomic production.

(ii) Even though estimates of prices have been evolved on a higher level of production in future, it is. according to several units, unlikely that this level could be maintained continuously in view of the spasmodic orders and also shifts in the placement of orders from one ancillary manufacturer to another.

(iii) Firm flow of orders is not received from many automobile producers necessitating staggering of their production programmes. Sometimes, sudden placement of orders also puts some of the ancillaries out of gear.

(iv) The demand from the replacement market is not regular and the catering to this market is only in the nature of additional production and may not be viewed as 'basic production' as the automobile industry is the main consumer and the ancillaries are established with this end in view for original equipment.

(v) Supplies against original equipment always entail lower prices which hardly give any margin.

(vi) The prices between original equipment and replacement market might widely differ but cognisance will have to be taken of the additional expenses incurred on special and individual packing for different destinations, freight charges, sales effort, etc. which are not incurred on bulk sales of original equipment.

(vii) Again a unit produces items some of which have a larger replacement demand while others have hardly any. The loss incurred by selling the items as O.E. is made up by a higher margin of profit in the former category, while there is no such scope in the case of the latter.

25.4. We have carefully considered the above and various other factors and come to the conclusion that the existing prices of ancillaries may not be regarded as excessive. Moreover, the commercial vehicles and jeeps are already decontrolled. It would be anomalous to control the prices of ancillaries while those of the vehicles themselves are not.

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CHAPTER IX

CONCLUSIONS, RECOMMENDATIONS AND ACKNOWLEDGEMENTS

26. Summary of conclusions and recommendations

Our conclusions and recommendations are summarised below :

(1) The scope of our inquiry covers ancillaries including batteries which go into the manufacture of different types of automobiles; tyres and tubes, which are not treated as automobile ancillaries, are excluded.

(Paragraph 2.2)

(2) Statistical data regarding annual licensed capacity and production of various ancillaries during 1963-64 to 1967-68 (April to Sept.) are given in table-6.

(Paragraph 6.3.6.)

(3) The D.G.T.D. should collect data of the automobile ancillary industry as comprehensively as possible so that the real progress achieved by the industry could be measured. It is equally important that the All India Automobile and Ancillary Industries Association and ancillary manufacturers should co-operate with the D.G.T.D. by furnishing requisite information. It is necessary that uptodate statistical information for such organised industry should be available for future planning as well as for watching over the progress of the industry.

(Paragraph 6.3.6.)

(4) The All India Automobile and Ancillary Industries Association has done commendable work in bringing out a yearly brochure of statistics of production of ancillary items in money value for the years 1961 to 1966. It is desirable that quantitative statistics should also be collected and published as this would give a more accurate picture of the

progress of the industry in as much as the figures in terms of value alone, particularly in the context of inflationary conditions prevailing in our country, are likely to give a distorted picture.

(Paragraph 6.3.9)

(5) Now that the ancillary industry has developed it is advisable that the automobile manufacturers should confine themselves to the production of essential items only. The ancillary industry should also try to attract the vehicle manufacturers by offering components at lower prices, with assured delivery schedules.

(Paragraph 7.4)

(6) It is desirable that the vehicle manufacturers and ancillary manufacturers should work in close co-operation and that there should be close liaison between them. Automobile manufacturers should give ancillary producers all the technical assistance when needed. In the interest of both the industries the relationship between them should be harmonious.

(Paragraph 7.5)

(7) Considering the export potential of the automobile ancillary industry, we are of the opinion that as and when collaboration agreements come up for renewal, there should be some compulsion to remove restrictive clauses which hinder exports from India.

(Paragraph 8.4)

(8) It is difficult to estimate the total capacity and production of automobile ancillaries for the entire country in small scale sector as full details about them are lacking.

(Paragraph 9.4)

(9) Full data of the small scale units particularly regarding capacity and production should be maintained by the State Governments.

(Paragraph 9.5)

(10) The raw material requirements of the small scale sector should be properly assessed and arrangements made for their steady supply to this sector.

(Paragraph 9.6)

(11) Action should be initiated to assess the range and size of production of different ancillary items existing in the small scale sector.

(Paragraph 10.2.2.)

(12) No further expansion of the existing capacity to manufacture ancillary items by the vehicle manufacturers should be permitted and no licences for any replacement of the machinery for the same should be issued wherever the ancillary industry can supply these items to them.

(Paragraph 10.3.5)

(13) Estimated requirements of various automobile ancillaries by 1969-70 are given in table 13

(Paragraph 11.5)

(14) It will be quite sometime before the indigenous manufacturers have the capacity and capability to meet the requirements of the automobile industry in respect of the various raw materials referred to in paragraph 12.7 and till then they will have to be met by imports.

(Paragraph 12.7)

(15) It is desirable that the producers of such of those automobile ancillaries for which raw materials are to be imported should go in for bulk purchases for their own benefit as well as that of the country.

(Paragraph 12.9)

(16) There should be also co-operation between automobile ancillary industry and the machine tool industry so that most of the requirements of machine tools can be made available indigenously.

(Paragraph 12.10)

(17) Although it is the responsibility of the automobile manufacturers to ensure that the parts used meet their specifications, it does not absolve the ancillary manufacturers of their responsibility in ensuring a uniform and acceptable standard of quality.

(Paragraph 13.1)

(18) As every small unit cannot afford to have all the necessary costly equipment to test quality the All India Automobile and Ancillary Industries Association should take necessary measures to help such units.

(Paragraph 13.2)

(19) It is desirable that all the automobile ancillary units should introduce quality control.

(Paragraph 13.6.2)

(20) The Sectional Committee of the Indian Standards Institution dealing with automobile vehicles may look into the question of standardising some non-functional parts of automobile also.

(Paragraph 14.2)

(21) As research cannot be undertaken by the small scale units, the All India Automobile and Ancillary Industries' Association should take an initiative in this respect.

(Paragraph 15.1)

(22) For a fuller utilisation of facilities at Central Mechanical Engineering Research Institute, Durgapur, National Test House, Alipore etc. greater coordination should be established between them and the automobile ancillary manufacturers.

(Paragraph 15.2)

(23) Product design and engineering which is most essential for the growth of the ancillary industry has been neglected. This requires to be developed as early as possible.

(Paragraph 15.3)

(24) The ancillary manufacturers should explore the possibility of making the network of distribution and service facilities more efficient and also ensure regular flow of parts to the replacement market.

(Paragraph 17.4)

(25) Certain remedial measures have been suggested for dealing with the problem of spurious parts in paragraph 17.5.

(Paragraph 17.5)

(26) It would be desirable if the ancillary manufacturers print warranty on every package in their own interest as it would create confidence in the consumers regarding the genuineness of the product.

(Paragraph 18)

(27) The figures of comparative prices given in table 16 show that in a few cases the difference between the prices charged by automobile manufacturers and/or their dealers and those by the ancillary manufacturers for the same items is quite high.

(Paragraph 19.6.1)

(28) Automobile manufacturers should reduce the price for the spare parts sold by them to the same level as those charged by the ancillary manufacturers.

(Paragraph 19.6.2)

(29) Government should ensure that restricted imports are confined to older models now operating on the Indian roads as far as possible, since the ancillary industry has substantially developed.

(Paragraph 20.1.7)

(30) The measures suggested by the All India Automobile and Ancillary Industries' Association for achieving an export target of Rs. 10 crores by 1970-71 may be considered

sympathetically, as exports apart from earning valuable foreign exchange would also lead to larger scale of production, yielding economies of scale and thereby reducing prices of ancillaries.

(Paragraph 21.4)

(31) On the question of export promotion it is hoped that there will be more frequent meetings between the representatives of automobile ancillary industry and Government so that the difficulties in the way of export are sorted out quickly for the mutual benefit of the country and the industry in general.

(Paragraph 21.8)

(32) The Compulsory Pre-shipment Inspection is expected to act as a check on export of sub-standard products, which is reported to be one of the main drawbacks of India's export efforts.

(Paragraph 21.9)

(33) It will not be proper to treat the castings and forgings as ancillaries for the purpose of this inquiry and they have, therefore, been kept out of the purview of the determination of fair prices.

(Paragraph 24.2)

(34) The study of costs of various units manufacturing automobile ancillaries has shown that in most of the units the prices calculated based on optimum capacity level are comparable to those ruling at present and only in a few cases there occurs a slightly higher margin.

(Paragraph 25.1)

(35) It would be anomalous to control the prices of ancillaries while those of the vehicles themselves are not.

(Paragraph 25.4)

27. Acknowledgements. Before concluding this Report we would like to express our thanks to all the ancillary manufacturers both in the large scale and small scale sectors as well as vehicle manufacturers who have tendered written and oral evidence to us. We are also thankful to the All India Automobile and Ancillary Industries Association, the Association of Indian Automobile Manufacturers and the Federation of Associations of Small Industries of India and other Associations who furnished us with valuable information and whose representatives gave evidence before us. Our thanks are also due to various Central and State Government Departments, our Embassies/High Commissions abroad for their valuable co-operation in connection with our inquiry.

M. ZAHEER
Chairman

K. T. MERCHANT
Member

S. SUBRAMANIAN
Member

P. V. GUNISHASTRI
Secretary

BOMBAY.
Dated: 2nd *July* 1968.

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APPENDICES

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APPENDIX I

(*Vide* paragraph 1.3)

New Delhi, the 31st May, 1966.

No. 20(1)-Tar/66,
Government of India
Ministry of Commerce

From
Shri S. Banerjee,
Deputy Secretary to the
Government of India.

To
The Secretary,
Tariff Commission,
C.G.O. Building,
101, Queen's Road,
Bombay-1.

Subject :—Price enquiries on Automobiles and ancillary industries etc.—Reference to the Tariff Commission regarding.

Sir,

I am directed to refer to the correspondence ending with this Ministry's letter No. 8(1)-Tar/64, dated the 26th/27th July, 1965 regarding price structure of automobile industry and to state as follows :—

(1) Protection granted to the Automobile industry is due to expire on the 31st December, 1967 and the Commission will shortly be undertaking a review of the industry to decide the question of need for continuance or otherwise of the protection thereto beyond 31st December, 1967. The Tariff Commission while investigating into the industry will no doubt examine the cost of production of automobiles produced by some of the units for the limited purpose of determining the quantum of protection required by the Automobile Industry.

(2) The Commission is aware that Government is exercising an informal control over the prices of automobiles. Though

the automobile units have been subjected to cost examination by the Cost Accounts Officers of the Ministry of Finance on some occasions in the past, no systematic study of the production costs of the industry has been made so far the purpose of determining the fair selling prices of automobiles. Government, therefore, feel that it would be advantageous if the Tariff Commission could enquire, as a part of its tariff enquiry about the automobile industry, into the cost structure and fair selling prices of automobiles.

I am therefore to request the Tariff Commission under Section 12(d) of the Tariff Commission Act, 1951 to undertake an enquiry into the production cost of automobiles and to furnish its recommendation/Report to Government about the fair selling prices of the different types of automobiles at present under production in the country.

(3) At present two automobile ancillary industries viz., (i) Piston Assembly and (ii) Fuel Injection Equipment (multi-cylinder pumps only) are under protection and protection to the former is due to expire on 31st December, 1966. Government have been receiving complaints that while Government exercises rigid control over the prices of the main automobile producers, no such control is exercised in the case of automobile ancillary industries. There were certain complaints also that the prices charged by the ancillary manufacturers for O.E. manufactures are exorbitant. To ascertain the correct position, some of the important ancillary manufacturing units were cost examined by the Cost Accounts Branch of the Ministry of Finance last year. Cost Reports of these units have revealed that the selling prices of some of the units have been on the high side. In order to probe the matter in a more systematic and comprehensive manner, it is considered desirable that simultaneously with an enquiry into the selling prices of the main automobile manufacturers, the Commission should undertake an enquiry into the cost structure of some of the major ancillary industries also, with a view to determine their fair selling prices. I am therefore to request the Tariff Commission under Section 12(d) of the Tariff Commission Act, 1951 to enquire into and to furnish its recommendation/Report to Government on the fair selling prices of ancillary industries. It is, however, at the discretion of the Commission to select such items for cost examination which may contribute substantially to the economics of the production of vehicles by the main manufacturers.

(4) Another aspect which the Government would like the Tariff Commission to go into is the profit margin to be allowed to the dealers in commercial vehicles and cars. On the basis of the last Report of the Commission the margin was

fixed at 7½% of the then ex-factory cost in the case of commercial vehicles and 10% of the net ex-factory cost in the case of car. Since then Government have approved several increases in prices of commercial vehicles and cars on account of various factors such as increase in the overseas price of imported components, increase in Government levies, etc. but in doing so, Government have made it a condition that there would be no corresponding increase in the profit margin of the dealers or manufacturers. This has resulted in the dealers' margin being pegged at the level originally fixed. In this regard also Government have received several representations from the dealers saying that the margin left to them is quite inadequate in view of the steadily rising costs and have requested for suitable increase in the profit margin. I am to request that the Tariff Commission may kindly take a note of this position and submit their recommendation on this point also.

2. It will be appreciated if the price fixation reports referred to in the above paragraph and the Tariff protection report are submitted separately to Government.

The favour of an urgent action is requested.

Yours faithfully,

Sd/-

(S. Banerjee)

Deputy Secretary to the Govt. of India.

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APPENDIX II

(*Vide* Paragraph 3.1)

List of firms or bodies who submitted their replies/memoranda to the Commission

A. LARGE SCALE PRODUCERS

1. Engine Valves Ltd.,
   354 M.K.N. Road,
   Madras-16.
2. Bimetal Bearings Ltd.,
   Huzur Gardens,
   Sembiam,
   Madras-11.
3. Motor Industries Co. Ltd.,
   22, Bannerghatta Road,
   Adugodi,
   Bangalore-30.
4. India Piston Ltd.,
   Huzur Gardens,
   Sembiam,
   Madras-11.
5. India Piston-Repco Ltd.,
   Huzur Gardens, Sembiam,
   Madras-11.
6. Rane (Madras) Ltd.,
   Ganapathi Buildings,
   47, Velacheri Road,
   Madras-32.
7. Escorts Ltd.,
   H-2, Connaught Circus,
   New Delhi-1.
8. Goetze (India) Ltd.,
   Block H, Connaught Circus,
   New Delhi-1.
9. Sundaram Clayton Ltd.,
   37, Mount Road,
   Madras-6.

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10. New Bemco Engineering Products Pvt. Ltd.,
Udyambag Industrial Estate,
P.O. Udyambag,
Belgaum (S.C. Rly.).

11. Acme Mfg. Co. Ltd.,
Construction House,
Ballard Estate,
Bombay-1.

12. D'Engg. Private Ltd.,
Gopal Bagh, Avanashi Road,
Coimbatore-18.

13. Teksons Private Ltd.,
Modi Chambers,
Bombay-4.

14. Automobile Products of India Ltd.,
Bombay Agra Road, Bhandup,
Bombay-78 (NB).

15. Hindustan Ferodo Ltd.,
Ghatkopar,
Bombay-77, AS.

16. Gabriel India Ltd.,
Agra Road, Mulund,
Bombay-80, NB.

17. Victor Gaskets India Ltd.,
S. 305, Agra Road, Mulund,
Bombay-80, NB.

18. Auto Accessories (India) Ltd.,
Forbes Building, Home Street,
Bombay-1.

19. Wyman Gordon India Ltd.,
Off Pokhran Road,
Majiwade,
THANA.

20. Automobile Ancillaries of India Pvt. Ltd.,
Plot No. 31, Kandivli Industrial Estate,
Mahatma Gandhi Road,
Kandivli (West),
Bombay-67.

21. K. S. Diesel Private Ltd.,
19-21, Hamam Street, Fort,
Bombay-1.

22. Brakes India Limited,
Padi,
Madras-50.

23. Fit Tight Nuts and Bolts Ltd.,
Old ashram, Andheri-Kurla Road,
Andheri,
Bombay-69.

24. Auto Pins (India) Regd.,
Kashmere Gate,
Delhi-6.

25. Luk Auto Ancillaries (India) Ltd.,
Jeevan Vihar Building,
Parliament Street,
New Delhi-1.

26. Associated Bearings Co. Ltd.,
Mahatma Gandhi Memorial Bld.,
Netaji Subhash Road,
Bombay-1.

27. National Engineering Industries Ltd.,
India Exchange,
India Exchange Place,
Calcutta-1.

28. Globe Auto Electricals Ltd.,
Agra Road, Mulund,
Bombay-80.

29. Precision Bearings India Ltd.,
Wavell House,
15 Graham Road,
Ballard Estate,
Bombay-1.

30. Mahindra Sintered Products Ltd.,
149, Bombay-Poona Road,
Pimpri,
Poona-18.

31. Canara Workshops Ltd.,
Mangalore-3. (South Kanara).

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32. Sankey Wheels,
Feeder Road, Durgapur.
West Bengal.

33. Wheels India Limited,
37, Mount Road,
Madras-6.

34. Payen Talbros Private Ltd.,
71/3, Najafgarh Industrial Area,
New Delhi-15.

35. Bharat Ball Bearing Company Ltd.,
49/1, Gariahat Road,
Calcutta-19.

36. Inspi Auto Industries Pvt. Ltd.,
2A/3, Asaf Ali Road,
New Delhi-1.

37. Flexicons Ltd.,
Anant Bhavan (3rd Floor),
Bhat Bazar, Near Masjid Bunder,
Bombay-9.

38. Hydraulics Ltd.,
29, Mount Road,
Madras-2.

39. Jamna Auto Industries,
Auto Industries Road,
Yamuna Nagar.

40. Ex-Cell-O India Ltd.,
78-B, Dr. Annie Besant Road.
Bombay-18, W.B.

41. Prestolite of India Ltd.,
Kundan Mansion,
2-A/3, Asaf Ali Road,
New Delhi-1.

42. Carburettors Ltd.,
29, Mount Road,
Madras-2.

43. J.M.A. Industries Ltd.,
Kashmere Gate,
Delhi-6.

44. Super Seals India Private Ltd.,
21-A, Nizam-Ud-Din West,
New Delhi-13.

45. Kirloskar Oil Engines Ltd.,
Elphinstone Road,
Poona-3.

46. Unicorn Pvt. Ltd.,
29, Mount Road,
Madras-2.

47. Lucas-TVS Ltd.,
37, Mount Road,
Madras-6.

48. Shardlow India, Ltd.,
'Huzur Gardens',
Madras-11.

49. Davis and White (India) Private Ltd.,
'Kundan Mansion',
2A/3, Asaf Ali Road,
New Delhi-1.

50. Guest Keen Williams Ltd.,
Jeevan Deep,
1, Middleton Street,
Calcutta-16.

51. The Premier Automobiles Ltd.,
Construction House,
Ballard Estate,
Bombay-1, (BR).

52. Union Co. (Accessories) Pvt. Ltd.,
29, Mount Road,
Madras-2.

53. Bharat Springs Private Ltd.,
1/446, Ghansyam Baug,
Opposite Aurora Theatre,
Matunga,
Bombay-19.

54. Lucas Indian Service Pvt. Ltd.,
10, Patullo Road,
Mount Road,
Madras-2.

55. Universal Radiators,
Mettupalayam Road,
Coimbatore-11.

56. Metropolitan Springs Private Ltd.,
Antop Hill,
West Wadala,
Bombay-31.

57. Blundell Eomite Private Ltd.,
1st Victoria Cross Lane,
Mazagaon, Bombay-10, (DD).

58. Best & Co. Private Ltd.,
13/15, North Beach Road,
Madras-1.

59. Sharco Industries Private Ltd.,
2750, Sharan Kutir,
Kashmere Gate,
Delhi-6.

60. Inex Engine Valves Pvt. Ltd.,
1, Narendra Place,
New Delhi.

61. Hindustan Safety Glass Works Pvt. Ltd.,
7, Chittaranjan Avenue,
Calcutta-13.

62. Stumpp Schuele and Somappa Pvt. Ltd.,
Hosur Road,
Bangalore South.

63. Jai Hind Rubber Products Pvt. Ltd.,
391 F, Grant Road,
Bombay 7.

64. Addison & Co. Ltd.,
158, Mount Road,
Madras-2.

65. Jonas Wood head & Sons (India) Ltd.,
41, Thiruneermalai Road,
Madras-44.

66. Bhagwan & Anand,
18-H, Connaught Circus,
New Delhi-1.

67. Usha Automobile & Engg. Pvt. Ltd.,
14, Princep Street,
Calcutta-13.

68. Schrader—Scovill Duncan Ltd.,
Udyog Bhawan, Wittet Road, Ballard Estate,
Bombay-1.

69. Standard Batteries Ltd.,
Vakola, Santa Cruz,
Bombay-55 A. S.

70. Mercantile & Industrial Development Co. Pvt. Ltd.,
National House 6, Tulloch Road,
Apollo Bunder,
Bombay-1.

71. The Aluminium Mfg. Co. Pvt. Ltd.,
2 Jessore Road, Dum Dum,
Calcutta-28.

72. Grant James Pvt. Ltd.,
11, Hungerford Street,
Calcutta-16.

73. Bajaj—Tempo Ltd.,
Bombay—Poona Road,
Chinchwad, Poona-19.

74. Simetalls Pvt. Ltd.,
61, Government Gate Road
Parel, Bombay 12 (DD).

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75. Fritz and Singh Pvt. Ltd.,
'Fritz House', 227, Netaji Subhas Chandra Bose Road,
Tollygunge, Calcutta-47.

76. The Antifriction Bearings Corpn. Ltd.,
Marshall Building,
20 Ballard Road,
Bombay-1, (BR).

77. Turner, Hoare & Co. Ltd.,
Gateway Building,
Apollo Bunder,
Bombay-1.

78. Automobile & Agricultural Industries Corpn.,
    497/3, Roop-Raj Sardar Vallabhbhai Patel Road,
    Bombay-4, BR.

79. Associated Battery Makers (Eastern) Ltd.,
    Barlow House, 59C, Chowringhee Road,
    Calcutta-20.

80. Hindustan Motors Ltd.,
    Uttarpara Hooghly,
    West Bengal.

81. Himco (India) Pvt. Ltd.,
    Dhanodham, Andheri Kurla Road,
    Bombay-59, A.S.

82. Kanti Engg Works,
    4, Annesley, off lamington Road,
    Bombay-7.

83. Oil Seals Mfg. Co. (India),
    Elphinstone Building, (1st floor),
    10, Veer Nariman Road,
    Bombay-1.

84. Ennore Foundries Ltd.,
    Ennore, Madras-57.

85. Sree Ramdas Motor Transport Pvt. Ltd.,
    Kakinada-1.

86. Mahindra & Mahindra Ltd.,
    Gateway Building, Apollo,
    Bunder Bombay-1, (BR).

87. Tata Engg. & Locomotive Co. Ltd.,
    Bombay House,
    24 Bruce Street, Fort, Bombay-1.

88. Fuel Injections Ltd.,
    Chitalsar, Manpada,
    Thana.

89. Bharat Radiators Pvt. Ltd.,
    Central Salsette Track Road,
    Kalina, Santacruz East,
    Bombay-29.

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90. International Instruments Private Ltd.,
140, Hosur Road,
Bangalore-30.

91. Indequip Engineering Ltd.,
Reid Road,
Ahmedabad-2.

B. SMALL SCALE PRODUCERS

1. National Automotive Industries,
52 M-Block Connaught Circus,
New Delhi.

2. T.C. Aggarwal & Sons,
Near House No. 3245,
Ranjit Nagar, New Delhi-8.

3. Ancillary Automatic Industries Pvt. Ltd.,
309, Bepin Behari Ganguli Street,
(2nd floor) Calcutta 12.

4. Light Engineering Enterprises,
10, Co-operative Industrial Estate Ltd.,
West Govind Nagar,
Kanpur, U.P.

5. Swifts Pvt. Ltd.,
Marathe Udyog Bhavan,
New Prabhadevi Road,
Bombay 28, D.D.

6. Sachin Engineering Corporation,
Marathe Udyog Bhavan,
New Prabhadevi Road,
Bombay 28, D.D.

7. Automotive Industries Service,
Amin Industrial Estate,
Sonawala Cross Road,
Goregaon East, Bombay 62.

8. The Foundary & Engineering Services,
16 & 17, Super "A",
Industrial Estate,
Guindy, Madras-32.

9. Hem Electric Manufacturing Co.,
28, Nandan Shah,
Varanasi-1.

10. Overseas Auto Parts Manufacturers,
17, AB, Sitafal Wadi,
Mazagaon, Bombay 10, DD.

11. Eastern Ore Corporation,
Mysore Bank Building,
377, Netaji Subhas Bose Road,
Madras-1.

12. Associated Equipment Services,
Thuraipakkam, Mahabalipuram Road,
Madras 20.

13. Sheet Metal Industries,
Thuraipakkam, Mahabalipuram Road,
Madras 20.

14. Industriano Pvt. Ltd.,
36, Jaipur House,
New Delhi-11.

15. Forgings Pvt. Ltd.,
18/5 Mile, Mathura Road,
Faridabad (Punjab).

16. Argonauts Engineering Works,
"Kent House"
14, Ganesh Chandra Avenue,
Calcutta-13.

17. The Hindustan Radiators Co.,
Station Road,
Jodhpur.

18. Standard Auto Parts Pvt. Ltd.,
Chopasni Road, Jodhpur.

19. Raab Manufacturing Co.,
Chunam Lane,
Lamington Road,
Bombay-7.

20. Standard Engineering Co.,
21/3, Hadapsar Industrial Estate,
Poona-13.

21. Monax Industries,
Military Road, Off Marol-Maroshi Road.
Marol, Bombay-59.

22. Automat Engineering Pvt. Ltd.,
14A, Kurla Industrial Estate.
Agra Road, Bombay 77.

23. Elofic Industries (India),
Patel Motor Market,
Delhi-6.

24. Specific Ventil Fabrik,
61, Bhrugupur Housing Society,
Broach (W.Rly.).

25. B.A.S. Industries,
33, Jhandewala Road,
Motia Khan, New Delhi.

26. K.B. Jethi & Co.,
95-B, Chittaranjan Avenue,
Calcutta-12.

27. Vanaz Engineers Pvt. Ltd.,
396, Veer Savarkar Marg,
Prabhadevi, Bombay-28 (DD).

28. Atul Engineering Works,
38/C, Lamington Road,
Bombay-8.

29. Hirlekar Precision Engineering, Co.,
Western India House,
Sir Pheroz Shah Mehta Road,
Bombay-1.

30. Precision Components Pvt. Ltd.,
Andheri—Kurla Road,
Morol Naka,
Bombay-59, A.S.

31. Krupp Group of Industries,
5, Mohanlal Mehta Market.
Grant Road, Bombay-7.

32. Dee-ky Industries,
Aish Bagh Road,
Lucknow-4, U.P.

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33. Wipers India,
Industrial Estate,
Sant Nagar,
Hyderabad-18.

34. Premier Electro Mechanical Fabricators,
6/C, Karpagambal Nagar,
Mylapore, Madras-4.

35. Auto Filers (India),
52, Bomanji Master Road,
Opp. Kalbadevi P.O.
Bombay-2.

36. Om Industries,
80/79, La-Touche Road,
(Bans Mandi Crossing),
Kanpur.

37. Small Parts Manufacturing Co.,
Saki-Vihar Road,
Saki Naka, Bombay-72 AS.

38. Malet Welding Works,
16, Bank Street,
Bombay-1.

39. Delhi Automotive Works,
Hoshiarpur Road,
Phagwara.

40. East India Engineering Corporation.
98, Benajhaber Road,
Kanpur-2.

41. Fair Field Manufacturing Co.,
Hanuman Building, 4th Floor,
Tambakanta, Pydhonie,
Bombay-3, BR.

42. N.S. Krishna Rao Body Works Pvt. Ltd.,
37, Mount Road, Guindy,
Madras-32.

43. Sunder and Kapoor,
107/108, Commerce House,
Medows Street, Fort,
Bombay-1.

44. Bhagat Motor Co. (Pvt.) Ltd.,
50, Okhla Industrial Estate,
New Delhi-20.

45. Dalip Manufacturers & Co.,
Sun Mill Road,
Sun Mill Compound,
Bombay-13.

46. Anglo American Autos Pvt. Ltd.
23, Ganesh Chandra Avenue,
Calcutta-13.

47. Industrial Corporation of India,
377, Vithalbhai Patel Road,
Bombay-4 BR.

48. Calmo-Flex Industries,
16, 1st Bhatwadi,
Girgaon, Bombay-4.

49. New Haven Engineering Co. Pvt. Ltd.,
Nanjee Building, 2nd Floor,
17-B, Horniman Circle, Fort,
Bombay-1.

50. Auto Accessories,
76-B, Chander Nagar,
Dehra Dun.

51. Standard Auto Parts Pvt. Ltd.,
Chopasni Road,
Jodhpur.

C. AS PROSPECTIVE PRODUCERS

1. Perfect Engineering Products Pvt. Ltd.,
24, Raja Bansilal Building,
11, Bruce Street,
Fort, Bombay-1.

2. Torsion Products Limited,
67, Rashtrapathi Road,
Secunderabad.

3. Sikands Limited,
61, New Industrial Township,
Faridabad.

4. Universal Radiators,
   Mettupalayam Road,
   Coimbatore-11.

5. Spence Limited,
   P-38, Mission Row Extn.,
   Calcutta-13.

6. India Pistons-Repco Limited,
   "Huzur Gardens",
   Sembiam, Madras-11.

7. Escorts Limited,
   Automotive Division,
   H-2, Counaught Circus,
   New Delhi-1.

8. Motor Industries Co. Ltd.,
   22, Bannerghatta Road,
   Adugodi, Bangalore-11.

9. Inex Engine Valves Pvt. Ltd.,
   1, Narendra Place,
   New Delhi.

10. Sharco Industries Pvt. Ltd.,
    2750, Sharan Kutir,
    Kashmere Gate, Delhi-6.

11. Atlas Automotive Components Pvt. Ltd.,
    Fort House, 221, Dadabhoy Naoroji Road,
    Bombay-1.

12. Luk Auto Ancillary (India) Limited,
    Jeevan Vihar Building,
    Parliament Street, New Delhi.

13. Ramon & Demm Limited.
    79, Apollo Street,
    Fort, Bombay-1.

14. Bharat Forge Company Limited.
    Mundhwa,
    P.B. No. 57,
    Poona-1.

15. Usha Martin Black (Wire Ropes) Ltd.,
    14, Princep Street,
    Calcutta-13.

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16. Needle Roller Bearing Co. Ltd.,
B 16, Road No. 2, Maharashtra
Industrial Development Corporation,
Thana.

17. The South Indian Export Company Ltd.,
5, Mclean Street,
Madras-1.

18. Brake Linings Limited,
6, Ring Road,
Lajpat Nagar—IV,
New Delhi-14.

19. Fit Tight Nuts & Bolts Ltd.,
Old Ashram, Andheri-Kurla Road,
Andheri, Bombay-69.

20. Lallubhai Amichand Pvt. Ltd.,
225/27, Tardeo Road,
Bombay-7.

21. Indo-Nippon Precision Bearings Ltd.,
5-10-173, Fateh Maidan Road,
Hyderabad.

22. Free India Dry Accumulators Ltd.,
2, Brabourne Road,
Calcutta-1.

23. Indian Industrial Corporation,
P.O. Haibargaon,
Dist. Nowgong (ASSAM).

24. Taximeter & Equipment Limited,
14/15-F, Connaught Place,
New Delhi-1.

25. Metropolitan Springs Pvt. Ltd.,
Antop Hill, West
Wadala, Bombay-31.

26. T.I. Miller Ltd.,
Ambattur,
Madras-53.

27. Prescast Engineering Pvt. Ltd.,
5th Floor,
India House Opp. G.P.O.,
Bombay-1.

28. Beni Limited,
1, Crooked Lane,
Calcutta-1.

29. Tecalemit (Hind) Ltd.,
8, Chittaranjan Avenue,
Calcutta-13.

30. Simpson & Co. Ltd.,
202/203, Mount Road,
Madras-2.

31. Ghatge and Patil Industries Pvt. Ltd.,
Uchagaon,
Dist. Kolhapur.

D. TYRES MANUFACTURERS

1. Firestone Tyre and Rubber Co. of India Pvt. Ltd.,
Hay Bunder Road,
Bombay-33 DD.

2. India Tyre & Rubber Co. (India) Pvt. Ltd.,
Spencer's Building, Forjett Street,
Cumballa Hill, Bombay-26, W.B.

3. Ceat Tyres of India Ltd.,
Bhandup,
Bombay-78.

4. Goodyear India Ltd.,
225 C, Acharya Jagadish Bose Road,
Calcutta-20.

5. Madras Rubber Factory Ltd.,
Dhun Building, 175/1, Mount Road,
Madras-2.

6 The Dunlop Rubber Co. (India) Ltd.,
Dunlop House,
Calcutta.

7. Premier Tyres Limited,
Maneckjee Wadia Building,
127, Mahatma Gandhi Road,
Bombay-1.

E. PRODUCERS' AND OTHER ASSOCIATIONS

1. The All India Automobile & Ancillary Industries Association,
80, Dr. Annie Besant Road,
Worli, Bombay-18.

2. Federation of Associations of Small Industries of India,
67-71, Tamarind Lane,
Fort Chambers, Fort,
Bombay-1.

3. Federation of All India Automobile Spare Parts Dealers' Association,
3620/21, Netaji Subhash Marg.
Daryaganj, Delhi-6.

F. GOVERNMENT DEPARTMENTS

1. Ministry of Industry and Supply,
Government of India, New Delhi.

2. Ministry of Industrial Development and
Company Affairs (Deptt. of Industrial Development).
New Delhi.

3. Directorate General of Technical Development,
(Automobile Division),
"Udyog Bhavan", New Delhi.

4. Office of the Development Commissioner
Small Scale Industries,
(Ministry of Commerce and Industry),
New Delhi.

5. Planning Commission,
Yojana Bhavan,
Parliament Street,
New Delhi-1.

6. The Chief Controller of Imports and Exports,
Government of India, Ministry of Commerce.
Udyog Bhavan,
New Delhi.

7. Government of Mysore,
Mysore Government Secretariat,
Vidhan Soudha,
Bangalore.

8. Indian Standards Institution,
Manak Bhavan,
9, Bahadur Shah Zafar Marg,
New Delhi-1.

9. The High Commission of India in the U.K.,
India House, Aldwych,
LONDON W.C. 2.

10. The Collector of Customs and Central Excise,
Custom House,
Cochin-3.

11. Engineering Export Promotion Council,
World Trade Centre,
14/1B. Ezra Street, (3rd Floor),
Calcutta-1.

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APPENDIX III

(*Vide* paragraph 3.2)

List of Factories visited by the Commission and its officers

Sl. No.	Name of Factory/Unit visited	By whom visited	Date of visit
1	2	3	4
	A. COMMISSION		
1	Gabriel India Ltd., Bombay.	Shri M. P. Pai, Chairman. Shri M. Zaheer, Member. Prof. K.T. Merchant, Member.	5-12-66
2	Victor Gaskets India Ltd., Bombay.		
3	Globe Auto Electricals Ltd., Bombay.		
4.	Prestolite of India Ltd., New Delhi.	Shri M. Zaheer, Member.	8-8-1967
5	Payen Talbros, New Delhi.	Do.	9-8-67
6	Marshal Industry, Allahabad.	Do.	11-8-67
7	East India Engg. Corpn., Kanpur.	Do.	14-8-67
8	Om Industries, Kanpur.	Do.	14-8-67
9	Auto King Radiator Mfg. Co., Kanpur.	Do.	16-8-67
10	Steel Fabricators, Kanpur.	Do.	16-8-67
11	Ex-Cell-O India Ltd., Bombay.	Prof. K.T. Merchant, Member.	8-12-66
12	Wyman-Gordon India Ltd., Thana.	Do.	8-12-66
13	Prestolite of India Ltd., New Delhi.	Do.	10-4-67
14	Escorts Ltd., Faridabad.	Do.	10-4-67
15	Luk Auto Ancillary India Ltd., Faridabad.	Do.	11-4-67

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1	2	3	4
16	Auto Meters Ltd., New Delhi.	Prof. K. T. Merchant, Member.	11-4-67
17	Super Seal (Pvt.) Ltd., New Delhi.	Do.	11-4-67
18	Payen Talbros Ltd., New Delhi.	Do.	12-4-67
19	Hydraulics (Pvt.) Ltd., Madras.	Do	31-5-67
20	Carburettors Ltd., Madras.	Do.	Do
21	Industrial Fastners, Guindy, Madras.	Do.	Do
22	Sundaram Clayton Ltd., Madras.	Do.	2-6-67
23	Brakes India Ltd., Madras	Do.	Do.
24	Lucas TVS Ltd., Madras.	Do.	Do.
25	Wheels India Ltd., Madras.	Do.	Do.
26	India Piston Repco Ltd., Madras.	Do.	3-6-67
27	Bimetal Bearings, Madras.	Do.	3-6-67
28	India Pistons Ltd., Madras.	Do.	3-6-67
29	Motor Industries Co. Ltd., Bangalore.	Do.	5-6-67
30	International Instruments Pvt. Ltd., Bangalore.	Do.	6-6-67
31	Fritz & Singh Pvt. Ltd., Calcutta.	Do.	22-9-67
32	Usha Automobile & Engg. Pvt. Ltd., Calcutta.	Do.	23-9-67
33	Orient General Industries, Calcutta.	Do.	23-9-67
34	Motor Industries Co. Ltd., Bangalore.	Shri S. Subramanian, Member.	11-12-67

APPENDIX III—(*Contd.*)

1	2	3	4
	B. OFFICERS		
1	Automobile Products of India Ltd., Bombay.	Shri N. Das, Technical Director (Engineering & Metallurgy)	15-10-66
2	Ex-Cell-O India Ltd., Bombay.	Do.	15-10-66 and 8-12-66
3	Gabriel India Ltd., Bombay.	Do.	15-11-66 and 5-12-66
4	Victor Gaskets India Ltd., Bombay.	Do.	15-11-66 and 5-12-66
5	Wyman Gordon India Ltd., Thana	Do.	15-11-66 and 8-12-66
6	Metropolitan Springs Pvt. Ltd., Bombay.	Do.	17-11-66
7	Teksons Pvt. Ltd., Bombay.	Do.	26-11-66
8	Globe Auto Electricals Ltd., Bombay.	Do.	5-12-66
9	Acme Mfg. Co. Ltd., Bombay.	Do.	15-12-66
10	India Pistons Repco., Madras.	Do.	31-5-67
11	Carburettors Ltd., Madras.	Do.	31-5-67
12	Hydraulics Ltd., Madras .	Do.	Do.
13	Sundaram Clayton Ltd., Madras.	Do.	2-6-67
14	Brakes India Ltd., Madras.	Do.	Do.
15	Lucas TVS Ltd., Madras.	Do.	Do.
16	Wheels India Ltd., Madras.	Do.	Do.
17	India Pistons Ltd., Madras.	Do.	3-6-67
18	Bimetal Bearings, Madras.	Do.	Do.
19	India Pistons Repco Ltd., Madras.	Do.	3-6-67

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APPENDIX IV

(*Vide* paragraph 3·3)

Names of companies selected for costing the names of the items costed together with the names of the Cost Accounts Officers who undertook the cost investigation

Sl. No.	Name and address of the unit	Items Costed	Names of the Cost Accounts Officers
1	2	3	4
1.	Ennore Foundries Ltd., Ennore, Madras-57.	Semi finished Cylinder Block and Cylinder Head and Timing case.	Shri S.K. Basu, Senior Cost Accounts Officer.
2	India Radiators, Madras.	Radiator Block Assembly.	Shri V. S. S. Rajan, Senior Cost Accounts Officer, Delhi.
3	Brakes India Ltd., Padi, Madras-50.	Brake Assembly.	
4	Sundaram Clayton Ltd., 37, Mount Road, Madras-6.	Servo-Equipment Air Brake and Compressor.	
5	Bharat Radiators Pvt. Ltd., Central Salsette Track Road, Kalina, Santacruz (East), Bombay-29.	Radiator Block Assembly.	Shri S. P. Mallya, Cost Accounts Officer.
6	Teksons Private Ltd., Modi Chambers, French Bridge, Bombay-4.	Radiator Block Assembly.	
7	International Instruments Private Ltd., 140, Hosur Road, Bangalore-30.	Instruments Panel.	
8	Motor Industries Co. Ltd., 22, Bannerghatta Road, Adugodi, Bangalore-30.	Fuel Injection Pump and Nozzle etc.	

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1	2	3	4
9	Wheels India Ltd., 37, Mount Road, Madras-6.	Wheel assemblies or wheels and discs.	Shri A. K. Banerjee, Cost Accounts Officer.
10	Hindustan Safety Glass Works Pvt. Ltd., 7, Chittaranjan Avenue, Calcutta-13.	Glass items	
11	Sankey Wheels Ltd., Feeder Road, Durgapur-1. (West Bengal).	Wheel assemblies or wheels and discs.	
12	Aluminium Manufacturing Co. Pvt. Ltd., 2, Jessore Road, Dum Dum, Calcutta-28.	Semi-finished Cylinder Block and Cylinder Head and Timing case.	
13	Indequip Engineering Ltd., Reid Road, Railwaypura, Ahmedabad-2.	Oil Lubricating Rotor Pump.	Shri A. K. Ganguli, Assistant Cost Accounts Officer.
14	Automobile Products of India Ltd., Bombay-Agra Road, Bhandup, Bombay-78 (NB).	Clutch Assembly, Brake Assembly.	
15	Turner Hoare & Co. Pvt. Ltd., Gateway Building, Apollo, Bunder, Bombay-1.	Clutch Assembly.	
16	Ex-Cell-O India Pvt. Ltd., 78-B, Dr. Annie Besant Road, Worli, Bombay-18. W.B.	Propeller shaft.	Shri A. T. Mukherjee, Assistant Cost Accounts Officer.
17	Lucas TVS Ltd., 37, Mount Road, Madras-6.	Dynamo, Starter Head Lamp, Wiper Motor, Alternator.	
18	Globe Auto Electricals Ltd., Agra Road, Mulund, Bombay-80.	Dynamo, Starter Head Lamp, Wiper Motor, Alternator.	Shri G. C. Santra, Cost Accountant.

APPENDIX V

(*Vide* paragraph 3·4)

List of persons who attended the Commission's Public Inquiry held on 7th November, 1967

Sl. No.	Name of the representative	Name of firm or body represented
	1	2
	A. PRODUCERS	
1	Shri A.R. Sundaresan	Automobile Products of India Ltd., Bhandup, Bombay-78.
2	,, M. S. Shastri	
3	,, S. V. Subramanian	
4	,, K. S. Minhas	
5	Smt. Sharayu A. Daftary	Bharat Radiators Pvt. Ltd., Central Salsette Track Road, Kalina, Santacruz East, Bombay-29.
6	Shri V. R. Prabhakaran	
7	,, V. Lakshminarayanan .	Brakes India Ltd., 37, Mount Road, Madras-6.
8	,, S. V. Kudva (Jr.) . .	Canara Workshops Ltd., Post Box No. 712, Mangalore-3.
9	,, S. Muthukrishnan . .	(i) Carburettors Pvt. Ltd., 29, Mount Road, Madras-2. (ii) Hydraulics Ltd., 29, Mount Road, Madras-2. (iii) Union Co. (Accessories) Pvt. Ltd., 29, Mount Road, Madras-2.
10	,, B. R. Baliga	Engine Valves Ltd., 354, M. K. N. Road, P.B. No. 1305, Madras-16.
11	,, P. B. Venkataraman	
12	,, F. Holdsworth	. Ennore Foundries Ltd., Ennore, Madras-57.
13	,, S. S. Gopal	
14	,, V. M. Menon	

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		1	2
15	Shri	H. D. Jijina	Escorts Ltd., H-2, Connaught Circus, New Delhi-1.
16	,,	G. N. S. Krishnan	
17	,,	C. B. Saran	Ex-Cell-O India Pvt. Ltd., 78 B, Dr. Annie Besant Road, Worli, Bombay-18, W.B.
18	,,	N. V. Yargop	
19	,,	K. C. Shah	
20	,,	S. D. Ambe	
21	,,	Laldas Jamnadas	Fit Tight Nuts & Bolts Ltd. Andheri-Kurla Road, Andheri East, Bombay-55.
22	,,	J. N. Gokli	
23	,,	M. Mukherjee	Fritz & Singh Pvt. Ltd. Fritz House, 227, Netaj Subhash Chandra Bose Road, Calcutta-47.
24	,,	Gurmit Singh	
25	,,	P. J. Sheth	Gabriel India Ltd., Agra Road, Mulund, Bombay-8.
26	,,	K. K. Campta	
27	,,	R. O. Zatakia	Globe Auto Electricals Ltd.. Bombay-Agra Road, Mulund, Bombay-80.
28	,,	V. Viswanath	
29	,,	P. D. Ovalekar	
30	,,	M. M. Docter	
31	,,	T. N. Ramaprasad	Goetze (India) Ltd., Block H, Connaught Circus, New Delhi-1.
32	,,	B. R. Kapoor	
33	,,	M. M. Malkani . . .	Guest, Keen, Williams Ltd., 'Jeevan Deep' 1, Middleton Street, Calcutta-16.
34	,,	A. J. Austen	Hindustan Ferodo, Ghatkopar, Bombay-77.
35	,,	N. S. Saroop	
36	,,	D. N. Agrawal	Hindustan Safety Glass Works Pvt. Ltd., 7, Chittaranjan Avenue, Calcutta-13.
37	,,	N. P. Gheewalla	
38	,,	A. C. Mehta	Indequip Engineering Ltd., Reid Road, Railwaypura, Ahmedabad-2.
39	,,	M. K. Raju . . .	India Pistons Ltd., Huzur Gardens, Sembiam, Madras-11.

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	1	2
40	Shri M. S. Krishna Rao	India Piston-Repco Ltd., Huzur Gardens, Sembiam, Madras-11.
41	,, K. Varugis	India Radiators Ltd., 99, Armenian Street, Madras-1.
42	,, N. Krishnan	International Instruments (P) Ltd., 140 Hosur Road, Adugodi Post, Bangalore-30.
43	,, P. N. Swaminathan	
44	,, T. T. Rangaswamy	Lucas T. V. S. Ltd., 37, Mount Road, Madras-6.
45	,, R. Bhojarajan	
46	,, P. V. Shah	Metropolitan Springs Pvt. Ltd., Antop Hill (West), Wadala, Bombay-31.
47	,, J. J. Shah	
48	,, D. N. Vatcha	Motor Industries Co. Ltd., Post Box No. 93, Bangalore-1.
49	,, K. H. Martin	
50	,, M. Gajarajan	
51	,, W. N. Talwar	Payen Talbros Pvt. Ltd., 71/3, Najafgarh Industrial Area, New Delhi-15.
52	,, Rana Pratap	Prestolite of India Ltd., 2A/3, Asaf Ali Road, New Delhi-1.
53	,, L. L. Narayan	Rane (Madras) Ltd., Ganapathi Bldgs., 47, Velachari Road, Madras-32.
54	,, A. P. Ramarkrishnan	
55	,, R. Kapoor	Sankey Wheels Ltd., Feeder Road, Duragpur-1.
56	,, Srija Ram	Sharco Industries, Pvt. Ltd., Post Box No. 1467, Sharan Kutir, Kashmere Gate, Delhi-6.
57	,, A. Krishnamurthy	Shardlow India Ltd., Huzur Gardens, Madras-11.
58	,, M. Narasimhan	

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APPENDIX V—(*Contd.*)

	1	2
59	Shri N. Krishnan	Sundaram Clayton Ltd., 37, Mount Road, Madras-6.
60	,, J. T. Dolwani	Teksons Pvt. Ltd., Modi Chambers, Bombay-4.
61	,, T. B. Nambiar	
62	,, P. B. Gandevia	Turner Hoare & Co., Pvt. Ltd., Gateway Building, Apollo Bunder, Bombay-1.
63	,, M. M. John	
64	,, M. K. Jhawar	Usha Automobile & Engg. Pvt. Ltd., 14, Princep Street, Calcutta-13.
65	,, K. S. Viswanathan	Wheels India Ltd., 37, Mount Road, Madras-6.
66	,, J. P. Gupta	Autometers Ltd., D/22, Defence Colony, New Delhi-3.
67	,, B. M. Pai	Firth Sterling Steel Co. of India Ltd., Plot No. F-3, Road No. 22, Thana Industrial Area, Thana.
68	,, S. D. Samant	
69	,, B. S. Gajra	Gajra Gears, 'Elve Chambers', Green Street, Fort, Bombay-1.
70	,, S. P. Marathe	Swift Private Ltd., Marathi Udyog Bhavan, New Prabha Devi Road, Bombay-25.
	B. PRODUCERS' ASSOCIATIONS	
71	Shri M. K. Raju.	The All India Automobile & Ancillaries Association, 80, Dr. Annie Besant Road, Worli, Bombay-18.
72	,, W. N. Talwar	
73	,, P. V. Shah	
74	,, V. S. Nair	
75	,, M. L. Bagri	Federation of Associations of Small Industries of India, 67-71, Tamarind Lane, Fort Chambers, Bombay-1.
76	,, R. C. Purohit	

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1	2
C. AUTOMOBILE MANUFACTURERS AND THEIR ASSOCIATION	
77 Shri N. Ramamurthi . . .	Ashok Leyland Ltd., "TIAM" House, 11/12, North Beach Road, Madras-1.
78 ,, R. K. Bajaj	Bajaj Tempo Ltd., Bombay-Poona Road, Chinchwad, Poona-19.
79 ,, D. M. Bhave	
80 ,, Morarka	Hindustan Motors Ltd., P.O. Uttarpara, Distt. Hooghly, West Bengal.
81 ,, D. Purkayastha	
82 ,, S. K. Swaminadhan	Mahindra & Mahindra Ltd., Gateway Building, Apollo Bunder, Bombay-1.
83 ,, R. K. Pitamber	
84 Brig. P.V. Subramanyam	Premier Automobiles Ltd., Agra Road, Kurla, Bombay-70.
85 Shri P. N. Vencatesan	
86 ,, C. V. Gopala Rao	
87 ,, Aderianwalla . . .	Tata Engg. & Loco. Co. Ltd., Bombay House, 24, Bruce Street, Fort, Bombay-1.
88 ,, B. G. Doshi	Association of Indian Automobile Manufacturers, Army & Navy Building, Third Floor, Mahatma Gandhi Road, Fort, Bombay-1.
89 ,, C. V. K. Murthy Rao	
90 ,, G. Fernandes	
D. AUTOMOBILE DEALERS' ASSOCIATIONS	
91 Shri N. K. Limji	Federation of Automobile Dealers Associations, 534, Sardar Vallabhai Patel Road, Bombay-7.
92 ,, R. Ramaswamy	
93 ,, P. Sharan Gupta	Federation of All India Automobile Spare Parts Dealears' Association, 3620/21, Netaji Subhash Marg, Darya Ganj (Faiz Bazar), Post Box No. 1052, Delhi-6.
94 ,, M. L. Arora	
95 ,, Kulbhushan Chandhoke	

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1	2
96 Shri P. K. Sethi	Maharashtra Motor Parts Dealers' Association Limited, Powell Building, 2nd Floor, 431, Lamington Road, Bombay-4.
97 ,, S. B. Anand	
98 ,, G. J. Doshi	
99 ,, R. M. Rane	Bombay Motor Merchants Association Ltd., Sandhurst Bridge, Sukh Sagar, 3rd Floor, Bombay-7.
100 Sardar Kuldipsingh Chedha	
101 Shri S. S. Rekhi	All India Motor Unions, Congress, 16-A, Asaf Ali Road, New Delhi-1.
E. GOVERNMENT DEPARTMENTS	
102 ,, N. Radhakrishnan, Dy. Secretary.	Ministry of Industrial Development & Company Affairs. (Department of Industrial Development) New Delhi.
103 Shri Hari Bhushan, Chief (Engineering).	Planning Commission, Yojana Bhavan, Parliament Street, New Delhi.
104 ,, P. S. Rao, Development Officer (Auto)	The Directorate General of Technical Development, (Automobile Ancillary Directorate) Udyog Bhavan, Maulana Azad Road, New Delhi.
105 ,, J. V. Bapuraj, Dy. Director (Ancillaries).	Development Commissioner, (Small Scale Industries), Nirman Bhavan, 7th Floor, Maulana Azad Road, New Delhi.
106 ,, P. M. Naik, Dy. Director of Industries (Engg.)	Directorate of Industries, Government of Maharashtra, Bombay.
107 ,, N. K. Rama Swamy, Dy. Director.	Indian Standards Institute, Manak Bhavan, 9, Bahadurshah Zafar Marg, New Delhi-1.

APPENDIX V—(*Concld.*)

		1	2
108	Shri	B. K. Raja Rao . . .	Indian Statistical Institute, Statistical Quality Control Unit, Bombay.
109	,,	P. M. Verma . . .	Hindustan Steel Ltd., Durgapur.
		F. OBSERVERS	
110	,,	H. R. Aslot. . . .	Automotive Engineers Society, 78 B, Dr. Annie Basant Road, Bombay-18.
111	,,	C. V. Hariharan . . .	Automobile News, 401, Tardeo Road, Bombay-34.
112	,,	T. W. Balchandani	Transtopics, Readymoney Mansion, 3rd Floor, Veer Nariman Road, Bombay-1.
113	Miss	L. D'Souza	

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APPENDIX VI

(*Vide* Paragraph 5.1.3)

Categories of components, as revised by Automobile Expert Committee in 1952

CATEGORY I : *Lists of components now manufactured in India*

	Name of components
I. *Engine Components* . .	(1) Rubber Mountings
	(2) Hose Pipes other than Fuel Line Hoses with Connections.
	(3) Fuel Pump Diaphragms
	(4) Fan belts
	(5) Mufflers
	(6) Exhaust pipes and tail pipes
II. *Frame & Body Components*	(1) Carpets, made to size or shape
	(2) Cushion Springs
	(3) Door and window fittings excluding glasses.
	(4) Trim materials (leather, Jute, canvas and leather cloth) made to size or shape.
	(5) Bus bodies
	(6) Station Wagon bodies
	(7) Truck bodies
	(8) Steel cabs for lorries
	(9) Pick up bodies
	(10) Panel van bodies
III. *Other components* . .	(1) Gaskets all sorts
	(2) Rubber components N.O.S.
	(3) Horns N.O.S.

APPENDIX VI—(*Contd.*)

CATEGORY II : *List of components likely to be manufactured in the next two years.*

	Name of components
I. *Engine Components* . .	(1) Crank Shafts
	(2) Cam Shafts
	(3) Connecting rods
	(4) Cylinder blocks and heads
	(5). Manifolds
	(6) Valves
	(7) Valve springs
	(8) Valve tappets
	(9) Fly wheels
	(10) Petrol tanks
	(11) Radiators
	(12) Fans
	(13) Piston assembly (*viz.*, pistons, piston rings and gudgeon pins)
	(14) Water pumps
	(15) Timing gears and sprockets
II. *Electrical Components* .	(1) Lamps, other than head lamp
	(2) Wire harness and battery & other cables made to size
	(3) Horns
III. *Transmission and Suspension Components*	(1) Front and rear springs, other than coil springs.
	(2) King pins
	(3) Shackle pins
	(4) Shock absorbers
	(5) Spring hanger brackets
	(6) Shackles
	(7) Transmission gear and gear box
	(8) Clutch Housings
	(9) Propeller Shafts
	(10) Universal joints including needle bearings therefor.

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APPENDIX VI—(*Contd.*)

	Name of components
	(11) Rear axle assembly (axle housing, axle shaft, ring gear, pinion and carrier differential).
	(12) Front axles
	(13) Hubs & brake drums
	(14) Front Suspension excluding coil springs.
IV. *Frame and Body Components*	(1) Seat runners
	(2) Short members of chassis frame
	(3) Brackets
V. *Other Components* . .	(1) Brake hose pipes
	(2) Ball bearings upto 2″ bore
	(3) Bushings separately imported excluding oil impregnator bushings.
	(4) Bumpers.

CATEGORY III : *List of components not likely to be manufactured in the next two years*

I. *Engine Components* . .	(1) Thin Wall bearings
	(2) Carburettors
	(3) Oil Pumps
	(4) Air Cleaner
	(5) Oil Filters
	(6) Fuel pumps
	(7) Fuel Line Hoses with connections
	(8) Cylinder Liners
II. *Electrical Components* .	(1) Distributors
	(2) Sparking plugs
	(3) Direction indicators
	(4) Electrical panel instruments
	(5) Wind shield wipers
	(6) Starting Motors
	(7) Generators

	Name of components
	(8) Head Lamps, including sealed beams.
	(9) Fuses
	(10) Switches
	(11) Ignition coils
	(12) Voltage and current regulators
III. *Transmission & Suspention Components.*	(1) Steering mechanisms
	(2) Pressed Wheels
	(3) Clutches
	(4) Suspension Coil Springs
IV. *Frame and Body Components*	(1) Toughened glass sheets
	(2) Body panels including turret tops and sides for passenger cars.
	(3) Long members of chassis frames
V. *Other Components*	(1) Roller bearings
	(2) Bushings oil impregnated
	(3) Panel instruments other than electrical.
	(4) Brake cylinders
	(5) All components N.O.S.

[Appendix F, page 36, Report of the Automobile Expert Committee, 1952.].

APPENDIX VII

(*Vide* paragraph 5.3.4)

Three broad categories of items supplied by ancillary industry as classified by the Ad-Hoc *Committee in* 1960.

(a) *Items whose import is not necessary.*—Paint, lacquer, varnishes, brake fluid. All upholstery, materials and trimming parts. Tyre, tube, flaps, fan belts, hoses, bulb horn, weather strip, door buffers and all other rubber components except fuel and brake hoses and brake parts. Shackles, shackle pins, U bolts, centre bolts, muffler and tail pipes, Battery, battery cable, rear light, parking and stop light, auto bulb, spark plugs of 14 and 18 mm. Rear view and mudguard mirrors, number plates, sun shade, sun visor, luggage carrier, mascots and motifs ash trays. Cab bodies and truck bodies of all categories. Tyre inflator and jacks.

(b) *Components whose production has started but complete self-sufficiency has not yet been achieved.*—Leaf spring hub caps, shock absorbers, brake lining and clutch facing, gaskets, cylinder liner, piston pin, piston rings electric horn, wire harness, dynamo for cars, roof lamp bulk sockets. Fuel injection equipment, inlet and exhaust valves, shell type bearings, radiator assembly, nuts and bolts, ball bearings upto 2″ size, fuel and air filters, laminated glass. Fuel tanks, clutch and brake assemblies. Car bodies, hinges, door handle, window regulator.

(c) *Components for whose production schemes have been approved or are under consideration and whose production is likely to be established by* 1961.—Starter motors, Dynamos, voltage regulator, distributor, ignition coil, switches, head and side lamps, traffic indicator, contact brake points, windscreen wipers, timing chain, bowden cables, oil seal, oil pumps, fuel pump (petrol), fuel hoses, carburettor, brake hose, brake shoe, back plates and vacuum servo brakes. Valve guide, valve seat, valve spring. Steering assembly, tie rod ends. Propeller shafts and universal joints. Ball, taper, cylinder and self-lubricating bearings. Wheels and rims. Instrument panel, dash board instruments, flexible shafts.

Paragraph 3.3 Chapter V, page 29, Report of the *Ad-Hoc* Committee on Automobile Industry, 1960.

APPENDIX VIII

(*Vide* paragraph 5.4.2)

Recommendations made in the Indian Productivity Teams Report on "Automobile Ancillary industry in U.S.A. and West Germany." 1963.

"As a direct consequence of the survey and evaluation of the existing pattern of the automobile ancillary industry in India, the studies and observations made in the USA and West Germany, and the analysis of the various factors that have contributed towards increasing productivity in those countries, the Team has come to one important basic conclusion that the most important contributory factor to the present American and West German industrial supremacy and prosperity is the deep rooted, inherent characteristic of their people (of all levels and vocations) i.e., their inherent national spirit-their inherent ambitions and aspirations to be always on top of the world-socially economically and politically. All other material factors are motivated by this one important and essential psychological element.

"No doubt, the high level of technological and scientific advancement has made it possible freely to invent improved methods of production in a spirit of healthy competition with the rest of the world; but the motivating force is their inherent national pride. Better standard of living is a religion to the Americans as a nation and there is always a better standard of living. An unending array of mechanical and methodical developments is the direct result of this motivating national spirit; and the purport of this report is obviously restricted to such mechanical and methodical developments in the industrial field. A variety of ingenious tools are being usefully employed by them for increasing their national productivity; but more than the ingenuity of such techniques and tools is the effective application to specific fields calculated to produce results and that is the secret of their success in the industrial world—as also in the various other fields of human endeavour. The recommendations that follow have been made after a comparative study of the industry in India and abroad with due regard to the fact that the indigenous industry which is still in the early stages of development cannot introduce the most advanced methods of production nor can it find the necessary resources to do so. Only such recommendations as can be easily implemented in the conditions obtaining in India are being made in the Report.

(i) "In the opinion of the Team, co-ordination and integration between the vehicle manufacturers and ancillary industries should grow at a much faster rate than hitherto and unless effective steps are taken to integrate the two principal sectors in this vast industrial complex, the target of 80 to 90 per cent average indigenous content set for the automobile industry in the Third Plan will not be achieved.

(ii) "In licensing manufacturing capacity, the guiding principle of economic size for each industry should be invariably kept in view, and an industrial unit should work in such a way that the plant and equipment are fully utilized. Also suitable steps should be taken by Government to ensure that licensed capacity goes into production within a reasonable period and that "dead" capacity does not block the entry of new units in the field.

(iii) "Unlike its counterparts abroad, one of the main problems confronting the indigenous automobile ancillary industries is the chronic shortage of raw materials. While there is paramount need for the development of indigenous sources of supply of such raw materials, the solution is no doubt a long-term one. In the interim, suitable arrangement should be made to ensure that installed capacity does not lie idle for want of raw materials.

(iv) "In the opinion of the Team, there is substantial idle capacity in the automobile ancillary industries in India. The extent to which the mobilisation of such idle capacity will contribute to a saving in foreign exchange by reducing the import bill is a fruitful field for study by a Team of experts of both officials and non officials.

(v) "It is necessary to set up a common research and testing organisation in India on the lines of the Motor Industry Research Association in Britain and, until such an organisation is established, the suitability of an ancillary product for original fitment should be determined by road testing and vehicle testing a procedure which is widely employed in the USA and elsewhere.

(vi) "We in India have neither the resources nor does our volume of production warrant the introduction of a programme of mechanisation and automation. We should be content with semi-automatic machines which would reduce human error and should raise productivity by increased labour and managerial efficiency and fullest possible machine utilisation.

(vii) "Standardisation of non-functional components of commercial vehicles in terms of their size and overall dimensions as also their fittings and mountings to promote interchangeability in different vehicles is both desirable and possible and should be taken up immediately by the Indian Standards Institution which should set up a separate Division Council for the automobile industry.

(viii) "The main industry and the ancillary industry should cooperate and broadly agree on the items which should be manufactured by each so that the field for specialisation by the ancillary industry is clearly demarcated.

(ix) "There is, at present, a deplorable lack of training facilities in most ancillary establishments and the industry will do well to pay early attention to this. The Central and State Governments should encourage the introduction of diploma and degree courses in production and industrial engineering in the Engineering Colleges and Polytechnics to augment the supply of technical personnel for the industry.

(x) "As a measure calculated to increase labour productivity from its present low levels the time rated system of wages should be replaced by a more realistic system under which the worker producing more gets a higher reward.

(xi) "A National Safety Council should be set up in the country for formulating a safety code with a view to ensuring the observance of better standards of safety and reducing the rate of industrial accidents from their present high levels.

(xii) "Another Productivity Study Team may be sent in at the end of the Third Five-Year Plan for further critical study of developments abroad for the benefit of indigenous industry.

(xiii) "Suitable machinery should be set up by Government of India, preferably in consultation with the Development Council, for Automobiles, Automobile Ancillary Industries and Transport Vehicle Industries to ensure the implementation of the foregoing recommendations."

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APPENDIX—IX

(*Vide* paragraph 5.4.2)

Conclusions and Recommendations of the A.P.O. Study Mission made in its Report on "Ancillary Industries for Automobile Manufacture in Japan" (1966).

The main purpose of the Study Mission was to assess the principal factors that have contributed to the rapid growth of the Japanese automobile and ancillary industry and judge as to what extent India can learn from the Japanese example and accelerate its own development. As a consequence of this survey and evaluation of the Japanese automobile industry, the Study Mission submitted the following recommendations, so far as they relate to the Indian industry :

(i) "Uninterrupted flow of raw material is a pre-requisite for the rapid growth of the automobile industry. While it is realised that the foreign exchange resources of India are limited, it is recommended that a higher priority be given for the allocation of raw materials for the automobile industry. Special emphasis must be laid by the Government for the speedy development of industries engaged in the manufacture of specialised raw materials, such as alloy steel. On the part of manufacturers, every effort must be made to substitute scarce imported raw materials and utilize available indigenous materials, as far as possible, consistent with the acceptable performance standards.

(ii) Large scale investment for plant & equipment is essential for modernization and expansion of production facilities in the automobile industry. A climate must, therefore, be created by the Government to increase the tempo of capital investment and capital formation in the industry. The success of Japanese automobile industry is mainly due to the high 'growth rate'.

(iii) The Machine Tool Industry in India must modernize and expand its facilities to keep pace with the automobile industry. The Machine Tool Manufacturers must set up a Technical Committee along with the representatives of automobile manufacturers to work out a programme for the development of special purpose machines and tools required by the automobile industry and improve the techniques and quality.

(iv) Research & Development are part and parcel of the industrial growth in Japan and irrespective of the present phase of industrial development, India can ill afford to neglect this important aspect of the Industry any longer. It is, therefore, essential in the industry as a whole, as well as in each of the vehicle manufacturing units that adequate facilities are provided for testing vehicles and major components manufactured in India under different operating conditions for safety performance economy and efficiency. This must obviously include test tracks incorporating the terrain and road conditions prevalent in our country. To encourage such an investment, it is recommended that Government implements suitable fiscal policies by way of allowing imports of special testing equipment on a duty-free or lower duty basis. It is also essential that the recommendations of Dr. Fogg of the Motor Industry Research Association of U.K., who specially visited India, to set up a Co-operative Research & Testing Organization be implemented without any further delay. In the meanwhile, a greater collaboration between Research & Industry must be established to utilise the facilities available in such units as the Central Mechanical Engineering Research Institute, Durgapur, Indian Institute of Science, Bangalore and the National Metallurgical Laboratory, Jamshedpur.

(v) "Indian industry must recognize the importance of design and development and provide for adequate engineering staff with specialised training in this field to undertake such responsibilities.

(vi) "The primary objective of technical collaboration is to ensure that the industry attains an International level of production and quality and stand on its own in the shortest possible time. The thinking on collaboration in India must, therefore, radically change and a time limit may be imposed on firms with existing collaboration for the absorption of the technical know-how. Also, this know-how must not be for the establishment of production of items only, but also for a continued development of new products to keep abreast of technological changes and improved product designs to utilise indigenous materials and to suit actual operating conditions in India. Now that an adequate industrial base has been established, fresh collaborations must be confined to new processes and new products only. As fast as possible know-how may be purchased on an outright basis and payment of royalties may be restricted to patents and special processes for a limited period only.

(vii) "Plans for expansion of vehicle manufacturers must be properly scrutinised to eliminate new capacity or increase in existing capacity for ancillary items already established in the ancillary sector. Where capacity has been established by the vehicle manufacturers, if the same items are made available by the ancillary industry at more economical prices, vehicle manufacturers must be prepared to change their policy from 'make to buy' such components.

(viii) "Vehicle Manufacturers should develop industrial co-operatives to utilise sub-contractors for intermediary processing and cutting down costs. This will facilitate their concentrating on traditional items within their own fields of activity.

(ix) "It is in the interests of the industry that effective liaison is maintained between the vehicle manufacturers, ancillary manufacturers and sub-contractors and this includes technical guidance in production engineering until such time as the manufacturing process is stabilised with respect to cost, quality and delivery of products.

(x) Surplus labour in the country should not lead to complacency in material handling. A concentrated drive must be made in individual units to adopt better material handling methods to suit each environment and improve the productivity.

(xi) "Indian Automobile Industry must be modern in its thinking and larger units must think in terms of modernizing and adopting mass production and computerised controls in all phases of operations. "Higher volumes and lower costs" is the secret for the growth of the automobile industry. Optimum labour and management efficiency to international standards is just as important.

(xii) "India must institute National Awards on the lines of the Deming Prize for quality, productivity and inventory levels on an Industry-wide basis.

(xiii) "Statistics are essential for industrial development and efforts must be made to co-ordinate this aspect between the Government, Association and individual manufacturers and make authentic data available at all times.

(xiv) "At a national level, it is necessary that endurance tests for individual Indian makes of cars and commercial vehicles are made along with similar foreign makes for comparative analysis of performance and efficiency. Similarly, Motor Racing must be encouraged to give national recognition to the most successful models as an impetus for product development.

(xv) "Facilities must be provided to depute teams abroad from all branches of the industry and at different levels of personnel. This must relate to specialists in specific fields rather than executive or administrative personnel.

(xvi) "Ancillary development is synonymous with vehicle development and it is recommended that a technical delegation from the vehicle manufacturers is deputed to Japan to see what has been achieved in as short a period as ten years.

(xvii) A "Reverse-flow" Study Mission must be invited from Japan to study the development pattern of the Indian Automobile Industry and put up its recommendations as to how India can benefit from the experience of Japan and accelerate its development. The Asian Productivity Organization may be requested to organize this team of specialists from Japan.

(xviii) "Exports are possible for automobile components and the ancillary industry must be deliberately planned as export-oriented to cater for individual markets. Any concessions by way of rebates, entitlements etc. given to the industry to promote exports may not only cover spare parts for models in current production within the country but also for foreign makes for which there is an export demand. All facilities for such market surveys for export of automobile ancillary items might be provided by the Government."

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APPENDIX X

(*Vide* paragraph 6.2.2)

List of manufacturers licensed for the manufacture of ancillary items.

1. *Engine*

1. *PISTONS*

1. India Pistons Ltd., Madras.
2. Shama Pistons and Rings Ltd., New Delhi.
3. Escorts Ltd., New Delhi.

2. *PISTON RINGS*

1. India Pistons Ltd., Madras.
2. Shama Pistons and Rings Ltd., New Delhi.
3. Goetze (India) Ltd., New Delhi.

3. *GUDGEON PINS*

1. India Pistons Ltd., Madras.
2. Shama Pistons and Rings Ltd., New Delhi.
3. Escorts Ltd., New Delhi.
4. Nathani Industries (P) Ltd., Bombay.

4. *CIRCLIPS*

India Pistons Ltd., Madras.

5. *CYLINDER LINERS*

1. India Pistons Ltd., Madras.
2. Shama Pistons and Rings Ltd., New Delhi.
3. Simpson & Co. Ltd., Madras.
4. Canara Workshops Ltd., Mangalore.
5. Ex-cell-o (India) Ltd., Bombay.
6. Goetze (India) Ltd., New Delhi.

6. *CYLINDER HEADS*

Prescast Engineering (P) Ltd., Bombay.
(For fiat cars).

7. *ENGINE VALVES*

1. Acme Mfg. Co. Ltd., Bombay.
2. Engine Valves Ltd., Madras.
3. Shama Engine Valves Ltd., New Delhi.
4. Inex Engine Valves Ltd., New Delhi.

8. *VALVE GUIDES*

1. Prefect Engg. Products Ltd., Bombay.
2. Acme Mfg. Co. Ltd., Bombay.

9. *TAPPETS*

1. Engine Valves Ltd., Madras.
2. Prefect Engg. Products Ltd., Bombay.

10. *VALVE INSERTS*

Prefect Engg. Products Ltd., Bombay.

11. *PUSH RODS*

1. Prefect Engg. Products Ltd., Bombay.
2. T.I. Miller Ltd., Madras.

12. *BUNDY WELDED TUBINGS*

T.I. Miller Ltd., Madras.

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13. *OIL PUMPS AND SPARES*

Kothari Auto Spares and Accessories Ltd., Rajkot.

14. *FILTERS*

1. H. J. Leach & Co. (P) Ltd., Bombay.
2. Motor Industries Co. Ltd., Bangalore.
3. John Fowler (India) P. Ltd., Calcutta.
4. Tecalemit (Hind) Ltd., Calcutta.
5. Fritz and Singh (P) Ltd., Calcutta.

15. *FILTER ELEMENTS*

1. H. J. Leach & Co. (P) Ltd., Bombay.
2. John Fowler (India) P. Ltd., Calcutta.

16. *FILTER INSERTS*

1. Motor Industries Co. Ltd.. Bangalore.
2. Sankey Electrical Stampings Ltd., Bombay.
3. Tecalemit (Hind) Ltd., Calcutta.
4. Fritz and Singh (P) Ltd., Calcutta.

17. *FILTER ASSEMBLY/CARTRIDGE*

Fritz and Singh (P) Ltd., Calcutta.

18. *GASKETS*

1. Payen Talbros Ltd., New Delhi.
2. Victor Gaskets India Ltd., Bombay.
3. Gaskets and Oil Seals Ltd., Baroda.

19. *FINISHED CRANKSHAFT*

Bharat Forge Co. Ltd., Poona.

20. *FLYWHEEL RING GEAR*

1. India Piston Repco Ltd., Madras.
2. Hasham Premji, Bombay.

21. *THINWALLED BEARINGS AND BIMETALLIC STRIPS*

1. Upper India Bearing Co. Ltd., Madras.
2. Kirloskar Oil Engines Ltd., Poona.
3. Bimetal Bearings Co. Ltd., Madras.

22. *BIMETAL STRIPS*

Bimetal Bearings Co. Ltd., Madras.

23. *THICKWALLED BEARINGS AND BUSHINGS*

Gleitlarger & Co. Bombay.

24. *TRANSMISSION ROLLER CHAINS ALL TYPES EXCLUDING BICYCLE CHAINS*

1. L.G. Balakrishnan & Bros. (P) Ltd., Coimbatore.
2. Natwarlal & Co. Rajkot.
3. C.Z. Roller Chains (I) Bombay.
4. Rolcon Engg. Co. Ltd., Vaidyanagar.
5. J.D. Bhanji & Co., Bombay.
6. Transmission (P) Ltd., Bombay.
7. S.K. Agencies (P) Ltd., Aligarh.

II. *Clutch*

25. *COMPLETE CLUTCH ASSEMBLY*

1. Automobile Products of India Ltd., Bombay.
2. Turner Hoare & Co., Bombay.
3. Luk Auto Ancillary (P) Ltd., New Delhi.
4. Bharat Auto Parts Mfg. (P) Ltd., (Gujarat).

26. *CLUTCH PLATES*

1. India Piston-Repco Ltd., Madras.
2. Tarasingh Harbindersingh, Bombay.
3. Rane (Madras) Ltd., Madras.
4. Automobile Products of India Ltd., Bombay.

27. *CLUTCH FACINGS*

1. Hindustan Ferodo Ltd., Bombay.
2. Bramec Suri (P) Ltd., Delhi.
3. Rane (Madras) Ltd., Madras.

III. *Transmission*

28. *GEARS AND SHAFTS*

1. Napco Bevel Gear Co. of India, New Delhi.
2. Escorts Transmission Ltd., Faridabad.
3. Ramon and Demm Ltd., Bombay.

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IV. *Cooling*

29. *WATER PUMPS*

Injecto (P) Ltd., Jaipur.

30. *RADIATORS*

1. India Radiators Ltd., Madras.
2. Teksons (P) Ltd., Bombay.
3. Union Co. (Accessories) P. Ltd., Madras.
4. Universal Radiators, Coimbatore.
5. Gaskets and Oil Seals (P) Ltd., Baroda.
6. Bharat Radiators (P) Ltd., Bombay.

31. *OIL/AIR COOLER*

Teksons (P) Ltd., Bombay.

32. *OIL/WATER COOLER*

Teksons (P) Ltd., Bombay.

33. *INTER COOLER AND AFTER COOLER*

Universal Radiators, Coimbatore.

34. *WATER THERMOSTAT*

India Radiators Ltd., Madras.

V. *Fuel*

35. *CARBURETTORS*

1. Carburettors (P) Ltd, Madras.
2. Injecto (P) Ltd., Jaipur.
3. Inspi Auto Industries Ltd., New Delhi.
4. S.D. Pandya, Bombay.

36. *FUEL PUMPS*

1. Carburettors (P) Ltd., Madras.
2. Auto Accessories, Dehra Dun.
   (Small Scale Unit).
3. Injecto (P) Ltd., Jaipur.
4. Inspi Auto Industries Ltd., New Delhi.
5. Premnath Motors Ltd., New Delhi.

37. *FUEL PUMP DIAPHRAGMS*

Injecto (P) Ltd., Jaipur.

38. *FUEL INJECTION EQUIPMENT*

(a) *Multi Cylinder Pumps*

Motor Industries Co. Ltd, Bangalore.

(b) *Single Cylinder Pumps*

1. Motor Industries Co. Ltd., Bangalore.
2. Fuel Injections Ltd., Bombay.
3. K. S. Diesels (P) Ltd., Bombay.

(c) *Delivery Valves*

1. Motor Industries Co. Ltd., Bangalore.
2. Fuel Injections Ltd., Bombay.
3. K.S. Diesels (P) Ltd., Bombay.
4. Jaibharat Trading Co., Delhi.

(d) *Elements*

1. Motor Industries Co. Ltd., Bangalore.
2. Fuel Injections Ltd., Bombay.
3. K.S. Diesels (P) Ltd., Bombay.
4. Jaibharat Trading Co., Delhi.

(e) *Nozzles*

1. Motor Industries Co. Ltd., Bangalore.
2. Fuel Injections Ltd., Bombay.
3. K.S. Diesels (P) Ltd., Bombay.

(f) *Nozzle Holders*

1. Motor Industries Co. Ltd., Bangalore.
2. Fuel Injections Ltd., Bombay.
3. K.S. Diesels (P) Ltd., Bombay.

39. *ROTOR PUMPS*

Indequip Engineering Ltd., Ahmedabad.

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40. *FUEL HOSES*

Teksons Pvt. Ltd., Bombay.

41. *HIGH PRESSURE HOSES*

1. Teksons Pvt. Ltd., Bombay.
2. Injecto Pvt. Ltd., Jaipur.

VI *Electrical*

42. *SPARK PLUGS*

1. Motor Industries Co. Ltd., Bangalore.
2. Auto Accessories India Ltd., Bombay.

43. *SWITCHES AND FLASHERS*

1. G.M.C. HIMco India Ltd., Bombay.
2. Globe Auto Electricals Ltd., Bombay.
3. J.M.A. Industries, Delhi.
4. Lucas TVS LTD., Madras.
5. Orient General Industries Ltd., Calcutta.
6. Prestolite of India Ltd., New Delhi.

44. *LAMPS*

1. Prestolite of India Ltd., New Delhi.
2. Usha Auto Engg. (P) Ltd., Calcutta.
3. Kalina Metal Co., Bombay.
4. Racman Koshatkin, New Delhi.
5. Auto Pins (I), Delhi.
6. Lucas TVS Ltd., Madras.
7. JMA Industries (P) Ltd., Delhi.
8. T.I. Miller Ltd., Madras.
9. Ashok V. Mehta, Bombay.
10. Ronuk Industries, Bombay.

45. *ELECTRIC HORNS*

1. Himco India (P) Ltd., Bombay.
2. Sharco Industries (P) Ltd., Delhi.
3. Orient General Industries, Calcutta.
4. J.M.A. Industries, Delhi.
5. Lucas TVS Ltd., Madras.
6. Aome Batteries (P) Ltd., Delhi.
7. Prestolite of India Ltd., New Delhi.
8. Union Co. (Accessories) P. Ltd., Madras.

46. *HORN RELAYS*

1. Lucas TVS Ltd., Madras.
2. Prestolite of India Ltd., New Delhi.
3. Himco India (P) Ltd., Bombay.
4. Orient General Industries, Calcutta.
5 Tools and Electricals (I) Ltd., Calcutta.

47. *HORN RINGS AND BUTTONS*

Orient General Industries, Calcutta.

48. *IGNITION COILS*

1. Prestolite of India Ltd., New Delhi.
2. Lucas Indian Service (P) Ltd., Madras.
3. Globe Ind. (P) Ltd., Bombay.

49. *VOLTAGE REGULATORS*

1. Lucas TVS Ltd., Madras.
2. Best & Co. (P) Ltd., Madras.
3. Prestolite of India, New Delhi.
4. Tools and Electricals (I) Ltd., Calcutta.
5. Globe Auto Electricals Ltd., Bombay.
6. Orient General Industries Ltd., Calcutta.

50. *DISTRIBUTORS*

1. Lucas TVS Ltd., Madras.
2. Globe Auto Electricals Ltd., Bombay.
3. Prestolite of India Ltd., New Delhi.

51. *DISTRIBUTOR ACCESSORIES*

(a) *Rotors and caps*

1. Prestolite of India Ltd., New Delhi.
2. Lucas Indian Service (P) Ltd., Madras.

(b) *Contact Sets*

1. Prestolite of India Ltd., New Delhi.
2. Tools & Electricals (I) Ltd., Calcutta.

(c) *Condensers*

Prestolite of India Ltd., New Delhi.

52. *SOLENOIDS AND CONTACT SETS*

1. Lucas TVS Ltd., Madras.
2. Prestolite of India Ltd., New Delhi.

53. *WINDSCREEN WIPER ASSEMBLY*

(a) *Wiper Motors*

1. Lucas TVS Ltd., Madras.
2. Globe Industries (P) Ltd., Bombay.
3. Prestolite of India Ltd., New Delhi.

(b) *Windscreen Arms and Blades*

J.M.A. Industries, Delhi.

54. *DYNAMOS*

1. Lucas TVS Ltd., Madras.
2. Orient General Industries Ltd., Calcutta.
3. Best & Co. Ltd., Madras.
4. Globe Auto Electricals Ltd., Bombay.

55. *STARTER MOTORS*

1. Lucas TVS Ltd., Madras.
2. Globe Auto Electricals Ltd., Bombay.
3. Best & Co. (P) Ltd., Madras.
4. Orient General Industries, Calcutta.

56. *GOVERNORS*

Prestolite of India Ltd., New Delhi.

57. *STORAGE BATTERIES*

1. Bharat Battery Mfg. Co. (I) Ltd., Calcutta.
2. Indian Battery Mfg. Co. (P) Ltd., Calcutta.
3. Electrical Storage Co. Ltd., Calcutta.
4. Eastern Accumulators Co. (P) Ltd., Calcutta.
5. Free India Dry Accumulators Ltd., Calcutta.
6. Standard Batteries Ltd., Bombay.
7. Himco (I) P. Ltd., Bombay.
8. ACME Batteries (P) Ltd., Delhi.
9. Oldham and Sons (P) Ltd., Madras.
10. Amco Batteries Ltd., Bangalore.
11. Mysore Electro-Chemical Works Ltd., Bangalore.
12. Associated Battery Makers (Eastern) Ltd., Calcutta.

VII. *Exhaust*

58. *SILENCER MUFFLERS, ETC.*

Usha Auto Engg. Co. Ltd., Calcutta.

VIII. *Propeller Shafts*

59. *UNIVERSAL JOINTS*

1. Hind Auto Industries Ltd., Lucknow.
2. Kothari Autoparts Mfrs. Ltd., Bombay.
3. Tarasingh Harbinder Singh, Bombay.
4. Bharat Autoparts Mfrs. (P) Ltd., (Gujarat).
5. Atlas Automotive Components Ltd., Bombay.

60 *PROPELLER SHAFTS*

Ex-Cell-O (I) Ltd., Bombay.

IX. *Suspension Front*

61. *SHOCK ABSORBERS*

1. Hydraulics (P) Ltd., Madras.
2. Premier Automobiles Ltd., Bombay.
3. Hind Equipment Corpn. Ltd., Bombay.
4. Gabriel India (P) Ltd., Bombay.
5. Escorts Ltd., New Delhi.

62. *TIE ROD ENDS/DRAG LINKS*

1. Rane (Madras) Ltd., Madras.
2. Kothari Auto Parts Mfg. Co., Bombay.
3. Hind Auto Industries Ltd., Lucknow.
4. Bharat Auto Parts Mfrs. P. Ltd., (Gujarat).

63. *KING PINS, SHACKLE PINS, ETC.*

1. Auto Pins, Faridabad.
2. Kothari Auto Parts Mfrs. (P) Ltd., Bombay.
3. Sri Ramdas Motor Transport, Kakinada.
4. Jayaraj Nadar and Sons, Madurai.
5. Elgi Equipment (P) Ltd., Coimbatore.
6. Gurmukh Singh and Sons, Ludhiana.
7. Nathani Industries Pvt. Ltd., Bombay.
8. Hind Auto Industries Ltd., Lucknow.

X. *Rear Axle*

64. *AXLE AND AXLE SHAFTS*

1. Napco Bevel Gear of India Ltd., New Delhi
2. Metropolitan Springs (P) Ltd., Bombay.
3. Bahri/Auto Corpn. P. Ltd., Bombay.
4. Premier Automobiles, Bombay.

XI. *Steering*

65. *STEERING LINKAGES*

Rane (Madras) Ltd., Madras.

66. *STEERING GEARS*

1. Globe Ind. Pvt. Ltd., Bombay
2. Ex-Cell-O Ltd., Bombay.

67. *STEERING WHEELS*

1. Emdet Engineers, Amritsar (Small Scale Unit).
2. Auto Steering India P. Ltd., New Delhi.

XII. *Brakes with Brake Drums*

68. *BRAKE ASSEMBLY*

1. Automobile Products of India Ltd., Bombay.
2. Brakes India Ltd., Madras.

69. *AIR-BRAKES (Complete Foundation Brakes)*

Sundaram Clayton Ltd., Madras.

70. *MASTER CYLINDER COMPONENTS*

1. Davis and White (I) P. Ltd., New Delhi.
2. Super Seals India (P) Ltd., New Delhi.

71. *HYDRAULIC BRAKE HOSES*

1. Western Auto Parts, Bombay.
2. Teksons Pvt. Ltd., Bombay. (Brake and vacuum hoses).
3. Super Seals India P. Ltd., New Delhi. (Hydraulic rubber brake hoses).

72. *BRAKE LININGS*

1. Automobile Products of India, Bombay.
2. Hindustan Ferodo Ltd., Delhi.
3. Bramec Suri (P) Ltd., Delhi.
4. Brake Linings, New Delhi.
5. Rane Brake Linings Ltd., Madras.

73. *BRAKE DRUM ASSEMBLY*

1. Acme Mfg. Co. Ltd., Bombay.
2. Canara Workshops Ltd., Mangalore.
3. Automobile & Agricultural Ind. Co. Ltd., Bombay.
4. Malleable Iron & Steel Castings Ltd., Bombay.
5. Prescast Engg. Auto Ltd., Bombay.

74. *HUBS AND 75. HUB CARS*

Canara Workshops Ltd., Mangalore.

XIII. *Wheels*

76. *WHEELS AND RIMS*

1. Wheels India Ltd., Madras.
2. Sankey Wheels Ltd., Durgapur.

77. *TYRE TUBE VALVES*

1. Gujrat Auto-cy Machine Products Ltd., Bombay.
2. Schradder-Scovill Duncan Ltd., Calcutta.

XIV. *Frame and Chassis*

78. *LEAF SPRINGS*

1. Premier Automobiles Ltd., Bombay.
2. Metropolitan Springs (P) Ltd., Bombay.
3. Tata Engg. & Locomotive Co. Ltd., Bombay.
4. Bharat Springs (P) Ltd., Bombay.
5. Canara Workshops Ltd., Nagpur.
6. Murarka Engg. Works, New Delhi.
7. Racmann Koshatkinn, New Delhi.
8. Canara Workshops Ltd., Mangalore.
9. India Leaf Springs Mfg. Co. (P) Ltd., Sanatnagar.
10. Bombay Motor Tdg. Co., Kapurthala.
11. Auto Pins India (Regd.), Faridabad.
12. Jamuna Auto Industries, Yamunanagar.
13. Jonaswoodhead & Sons (I) P. Ltd., Madras.
14. K.T. Steel Industries (P) Ltd., Thana.
15. Delta Products (P) Ltd., Thana.
16. Torison Products (P) Ltd., Secunderabad.
17. Globe Motors Ltd., New Delhi.

XV. *Body Upholstery*

79. *WINDOW CHANNELS AND WEATHER STRIPS*

Usha Automobiles & Engg. (P) Ltd., Calcutta.

80. *AUTOMOBILE PRESSINGS*

1. G.K.W. (Sankey Dn.), Bombay.
2. Anandji Haridas, Bombay.
3. Simpson & Co. Ltd., Madras.

81. *LIFTS AND HOISTS*

1. K.G. Khosla & Co., New Delhi.
2. Elgi Equipments Ltd., Coimbatore.
3. Spence Ltd., Calcutta.
4. Service Station Equipment Co., Bombay.
5. Tacalemit (I) Ltd., Calcutta.

82. *DOORLOCKS/REMOTE CONTROL*

Usha Auto & Engg. Co. Ltd., Calcutta.

83. *WINDOW REGULATORS*

Usha Auto & Engg. Co. Ltd., Calcutta.

84. *SAFETY CLASS*

(a) *Laminated Variety*

1. Hindustan Safety Glass Works (P) Ltd., Calcutta.
2. Shree Vallabh Glass Works Ltd., Anand.
3. Atul Glass Industries, New Delhi.

(b) *Toughened Variety*

1. Hindustan Safety Glass Works (P) Ltd., Calcutta.
2. Shree Vallabh Glass Works Ltd., Bombay.

(c) *Curved Variety of Toughened glass*

1. Hindustan Safety Glass Works (P) Ltd., Calcutta.
2. Shree Vallabh Glass Works Ltd., Bombay.

XVI. *Instrumentation*

85. *PANEL INSTRUMENTS*

1. International Instruments Pvt. Ltd., Bangalore.
2. Autometers Ltd., New Delhi.

86. *CLOCK PANELS*

Autometers Ltd., New Delhi.

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87. *TACHOGRAPHS*

1. International Instruments Pvt. Ltd., Bangalore.
2. Autometers Ltd., New Delhi.

88. *WIRE HARNESS PANEL HARNESS*

1. Orient General Industries Ltd., Calcutta.
2. Racmann Koshatkin (Regd.), New Delhi.
3. Union Co. (Accessories) Ltd., Madras.

89. *TAXI METERS AND SPARES*

1. R.C. Edwards & Co. (P) Ltd., Bombay.
2. Taximeter and Equipment Ltd., New Delhi.

90. *CONTROL CABLES*

1. Forbes, Forbes and Campbell Co. Ltd., Bombay.
2. Southern India Corpn., Madras.
3. Usha Martin Block (Wire Ropes) Ltd., Calcutta.

91. *BATTERY CABLES AND END FITTINGS*

Prestolite of India Ltd., New Delhi.

92. *IGNITION CABLES AND END FITTINGS*

Prestolite of India Ltd., New Delhi.

XVII. *Tools*

93. *TYRE INVFLATORS*

1. Union Co. (Acc.) Ltd., Madras.
2. Hindustan Indus. & Mach. Mfg. Co. Ltd., Varanasi.
3. Ahmedabad Star Engg. Works, Ahmedabad.
4. Indo Belga Engg. Co. Ltd., Ahmedabad.
5. Service Station Equipment Co. Ltd., Bombay.

94. *JACKS (MECHANICAL & HYDRAULIC)*

1. Acme Batteries (P) Ltd., Delhi.
2. Associated Engg. Works Ltd., Delhi.
3. K.G. Khosla & Co. Ltd., New Delhi.
4. Consolidated Pneumatic Tool Co., Bombay.
5. New Remco Engg. Products Ltd., Belgaum.
6. Hindustan Indus. & Mach. Mfg. Co., Varanasi.
7. Union Co. (Acc.) Ltd., Madras.

94. *JACKS* (Contd.)

8. Sharco Industries (P) Ltd., Delhi.
9. Crescent Iron & Steel Corpn. Ltd., Bombay.
10. Service Station Equipment Co., Bombay.
11. Mahindra Oven (P) Ltd., Bombay.

XVIII. *Miscellaneous*

95. *OIL SEALS*

1. Swastic Rubber Products Ltd., Poona.
2. Racmann Koshatkinn, New Delhi.
3. Auto Pins (I), Delhi.
4. Superseals India (P) Ltd., New Delhi.
5. Fenner and Cockill Ltd., Madurai.
6. Ramdas Motor Transport (P) Ltd., Kakinada.
7. Oil Seals Mfg. Co. (I) Ltd., Bombay.

96. *'O' RINGS*

Oil Seals Mfg. Co. (I) Ltd., Bombay.

97. *BALL AND ROLLER BEARINGS*

1. National Engg. Industries Ltd., Jaipur.
2. Antifriction Bearings Corpn. Ltd., Lonavla.
3. Bharat Ball Bearing Co. Ltd., Ranchi.
4. Precision Bearings (I) Ltd., Baroda.
5. Associated Bearing Co. Ltd., Poona.
6. P.S. Ball Bearing Co., Faridabad.
7. Indo-Nippon Precision Bearings Ltd., Hyderabad.
8. Needle Roller Bearings (India), Bombay.

98. *H.T. BOLTS AND NUTS*

1. Fit, Tight, Nuts & Bolts Ltd., Bombay.
2. G.K.W. Ltd., Calcutta.
3. Simmonds Marshall Ltd., Bombay.
4. Sundaram Fasteners (P) Ltd., Madras.
5. Sikands Ltd., Faridabad.

99. *TYRES AND TUBES*

1. Dunlop Rubber Co. (I) Ltd., Calcutta.
2. Dunlop Rubber Co. (I) Ltd., Madras.
3. Firestone Tyres & Rubber Co. of India Ltd., Bombay.
4. Ceat Tyres of India Ltd., Bombay.
5. Goodyear India Ltd., Calcutta.
6. Madras Rubber Factory, Madras.
7. Premier Tyres Ltd., Bombay.
8. Inchek Tyres Ltd., Calcutta.
9. Universal Tyres, Calcutta.
10. Bharat Tyres and Rubber Co., Trivandrum.
11. Podar Mills, Kota.
12. Southern Tyres, Madras.

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APPENDIX XI

(*Vide* paragraph 6.3.7)

Statement showing the value of automobile parts/components produced during the years 1961 *to* 1966
(Compiled by All India Automobile & Ancillary Industries Association)

Sl. No.	Description	1961	1962	1963	1964	1965	1966
1	2	3	4	5	6	7	8
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
	Engine Parts:						
1 2	Piston Piston Pin	11,434,841	14,424,843	18,176,823	18,053,380	24,080,894	36,102,978
3	Piston ring	4,932,711	7,593,116	7,759,370	8,468,510	8,110,368	13,092,103
4	Cylinder liner	1,553,651	1,550,002	1,943,240	2,234,259	2,357,603	3,365,014
5	Gaskets	4,500,000	6,136,000	11,576,862	20,414,567	17,909,937	17,880,292
6	Inlet & Exhaust Valve	2,355,000	3,243,000	5,092,000	9,252,200	11,253,000	12,234,405
7	Carburettor & Repair Kit	55,620	129,316	183,454	86,489	291,185	1,618,000
8	Fuel Pump (Petrol) & Repair Kit.	..	..	..	3,525	57,172	981,162
9	Fuel Injection Pump (Diesel)	20,437,488	20,031,789	24,689,905	30,617,474	32,403,800	35,147,716

10	Fuel Injection Nozzle .	8,230,315	8,999,781	13,469,964	13,807,333	19,400,530	23,716,807
11	Fuel Injection Nozzle Holder.	6,637,120	4,955,917	5,376,068	7,381,146	8,938,517	10,313,322
12	Fuel Injection Delivery Valve.	1,328,999	2,974,817	2,358,159	2,767,849	3,874,157	4,129,038
13	Fuel Injection Pump Elements.	4,791,679	8,636,363	9,772,157	10,270,529	12,971,955	13,989,045
14	Filter (Fuel, Oil & Air) .	1,567,089	2,547,498	3,163,958	4,997,320	5,479,397	5,412,060
15	Filter Element . .	366,513	1,713,252	3,461,848	4,376,293	5,923,230	6,417,635
16	Filter Cartridges . .						
17	Filter Insert : :	797,336	1,129,848	1,323,034	2,244,519	4,134,246	6,523,000
18	Fuel Line/Oil Line .	51,350	767,430	805,315	889,561	1,285,133	1,634,765
19	Timing Chain . .	..	83,500	989,980	1,596,300	1,709,650	2,095,075
20	Flywheel Ring Gear .	..	..	..	599,005	1,267,954	1,069,498
21	Water Pump and Parts .	15,000	18,000	31,800	105,800	190,600	433,526
22	Radiator . . .	7,860,932	13,247,315	14,789,590	18,345,516	23,350,402	33,649,284
23	Thinwall Bearing & Bush	2,565,000	3,703,475	10,669,544	15,776,341	19,984,880	20,888,297
24	Thickwall Bearing & Bush	..	..	..	..	350,000	1,267,000
25	Oil Lubricating Rotor Pump	..	..	13,553	221,635	1,316,919	1,967,892
26	Self Lub.(Sintered) Bearing	545,803	1,031,588	1,735,310	2,303,640	2,978,325	3,226,776
27	Fan Belt . . .	394,721	850,140	1,360,632	1,021,430	1,415,855	1,860,782
28	Engine Mounting .	225,486	237,049	394,351	242,175	840,549	1,193,795
29	Other Engine Parts .	..	145,577	253,565	269,453	352,253	356,000
	TOTAL . .	80,646,654	104,149,616	139,390,482	176,346,249	212,228,511	260,565,267

APPENDIX XI—(*Contd.*)

1	2	3	4	5	6	7	8
Electrical Parts:							
30	Starter Motor . .	1,044,640	3,217,149	9,076,067	16,967,433	23,784,780	27,944,719
31	Generator . . .	1,422,282	1,536,583	4,104,853	7,925,336	10,777,455	14,737,272
32	Voltage Regulator .	380,953	598,448	1,532,162	4,009,367	4,975,643	5,065,451
33	Distributor . . .	..	10,455	376,575	1,336,910	3.103,082	3,212,342
34	Distributor Caps & Rotor	..	..	..	139,634	906,842	516,359
35	Distributor Point . .	8,800	23,900	94,800	331,662	922,179	738,000
36	Condenser . . .	..	..	..	44,110	277,941	125,896
37	Ignition Coil . .	..	7,685	23,175	1,458,598	1,048,117	1,598,167
38	Ignition Switch . .	..	..	..	..	..	309,827
39	Spark Plug . . .	3,357,151	2,978,644	4,496,897	4,763,915	4,541,537	5,377,061
40	Other Electrical parts .	388,866	1,546,046	2,367,906	2,785,514	4,594,151	5,610,253
	TOTAL . .	6,602,692	9,918,910	22,072,435	39,762,479	54,931,727	65,235,347

Drive, Transmission and Steering Parts:

41	Clutch Assy, and Clutch Plate.	4,259,200	4,688,780	7,833,060	14,555,000	114,788,260	19,612,385
42	Clutch Facing	605,000	861,000	1,970,000	2,068,000	2,733,000	2,373,410
43	Tie Rod Ends/Drag links	1,477,686	1,540,192	2,241,920	3,754,355	3,653,862	7,370,170
44	Steering Wheel	217,698	317,981	420,938	803,879	791,335	2,600,120
45	Steering Gear	..	..	..	..	..	1,009,370
46	Gear and Shaft	..	..	..	..	3,909,813	4,038,000
47	Propeller Shaft	..	2,869,000	7,996,150	10,557,730	12,687,890	16,909,510
48	Universal Joint Cross Assy.						
49	Rear Axle Shaft	..	114,710	512,600	708,948	1,108,292	1,756,355
50	Ball & Roller Bearing	3,551,554	4,410,155	5,312,000	6,314,510	7,308,060	11,918,620
51	King Pin	602,453	1,006,300	1,560,012	2,293,087	3,340,190	4,263,062
52	Oil Seal	1,591,849	3,476,573	5,162,580	5,654,854	7,267,733	9,726,000
53	Clutch Spring Valve Spring etc.	118,054	1,490,268	3,397,297	5,590,209	6,617,205	7,718,121
54	Grease Nipple	..	35,000	110,000	135,000	164,000	651,338
55	Wheel	..	9,607,709	22,662,070	31,321,922	43,682,960	44,184,000
	TOTAL	12,423,494	30,417,668	59,178,627	83,757,494	108,052,600	134,130,461

APPENDIX XI—(*Contd.*)

1	2	3	4	5	6	7	8
Suspension and Braking Parts :							
56	Leaf Spring	20,288,944	27,265,349	37,147,723	38,205,598	40,317,980	60,480,000
57	Shock Absorber	3,098,425	7,095,319	9,499,755	15,721,382	18,327,874	25,534,110
58	Brake & Parts	697,000	824,000	3,671,350	8,517,786	25,016,897	45,363,007
59	Brake Drum	853,670	1,047,778	1,431,120	3,163,920	3,311,458	5,082,200
60	Brake Lining	10,501,000	14,161,000	20,153,470	24,669,850	26,577,000	31,798,680
61	Brake Hose	..	..	280,000	420,000	961,960	1,985,103
62	Brake Fluid	714,000	628,000	851,000	2,879,545	3,371,877	4,610,211
63	Spring Shackle & Pin	701,050	990,031	1,660,800	2,680,380	3,362,106	4,680,860
	TOTAL	36,854,089	52,011,477	74,695,218	96,258,461	121,247,152	179,534,171
Equipments :							
64	Head, Tail & Other Lights	452,168	1,427,594	4,137,674	4,836,917	4,369,270	7,097,000
65	Dash Board Instruments	1,185,533	1,255,611	5,597,097	12,725,522	11,669,170	12,063,818
66	Windscreen Wiper	..	9,565	186,705	342,715	1,873,315	3,944,861
67	Windscreen Wiper Arm & Blade.	..	208,776	271,732	511,940	716,188	1,416,238

68	Horn Electric . .	1,574,531	3,853,486	3,311,604	4,399,334	5,560,889	5,006,376
69	Horn Relay . .	93,858	159,323	275,915	321,826	307,206	299,335
70	Bulb	1,778,975	2,087,502	2,636,124	2,847,819	2,717,008	3,868,912
71	Flasher Unit . .	..	23,041	65,246	266,901	444,011	578,782
72	Sealed Beam . .	215,880	488,320	611,758	653,008	234,322	1,621,603
73	Switches . . .	80,898	90,666	106,720	623,300	1,038,752	1,610,678
74	H. & L. Volt Wire. .	1,881,000	2,264,460	3,556,410	3,236,640	2,978,580	4,283,560
	TOTAL . .	8,262,843	11,868,344	20,756,344	30,765,922	31,908,711	41,791,163
Chassis and Body Parts:							
75	Silencer & Tail Pipe .	359,889	425,544	644,318	536,495	1,005,828	1,826,676
76	Rubber Parts . .	1,320,576	2,240,773	2,154,449	4,192,775	5,094,569	7,861,284
77	Window Regulator .	161,037	377,727	360,333	430,698	629,922	670,912
78	Door Lock . . .	..	609,808	556,946	688,240	1,148,089	1,035,211
79	Door Channel . .	330,000	395,000	422,000	613,000	877,000	1,109,000
80	Sheet Metal Parts .	384,480	643,715	834,920	827,124	1,058,521	4,010,630
81	Ferrous & Non-Ferrous Castings	4,870,490	7,109,806	8,432,677	11,935,528	15,544,682	17,128,710
	TOTAL . .	7,426,472	11,802,373	13,405,643	19,223,860	25,358,611	33,642,423

APPENDIX XI—(*Contd.*)

1	2	3	4	5	6	7	8
Miscellaneous							
82	Bus, Truck & Other Bodies	22,529,125	33,841,679	37,388,652	40,233,971	48,031,180	85,550,222
83	Taxi Meter . .	..	..	..	357,000	582,000	887,250
84	Self Locking Nut .	871,912	1,014,051	1,500,607	1,809,217	2,743,522	3,295,406
85	Jack	564,020	651,546	691,697	770,709	854,493	1,018,377
86	Garage Equipment & Air Compressor.	159,000	686,000	1,319,000	2,827,000	2,500,000	3,860,866
87	Tyre Tube Valve . .	..	..	..	..	..	3,818,000
88	Miscellaneous . .	1,854,055	3,675,488	3,272,728	4,841,053	6,060,878	6,418,910
	TOTAL . .	25,978,112	39,868,764	44,172,684	50,838,950	60,772,073	104,849,031
	GRAND TOTAL . .	178,194,356	260,037,152	373,672,074	496,953,415	614,499,385	817,747,863

APPENDIX XII

(*Vide* paragraph 10.3.2)

Demarcation of items normally expected to be manufactured by Ancillary Industry and List of items to be manufactured either by vehicle manufacturers or by Ancillary Industry

[Government of India, Department of Industry, Ministry of Industry and Supply *vide* their letter No. A.E. Ind 1(42)/62, dated 16th March 1965.]

LIST— 'A':

Items normally expected to be manufactured by the Ancillary Industry

Engines :

1. Pistons.
2. Piston Pins.
3. Piston Pin Bushings.
4. Piston Pin Retainer Rings.
5. Piston Rings.
6. Crankshaft Bearings (Steel backed white metal or copper lead).
7. Roller Chain.
8. Valves.
9. Value Springs.
10. Radiator.
11. Radiator Cap.
12. Fuel Tank Cap.
13. Exhaust Muffler.
14. Exhaust Pipe.
15. Tail Pipe.
16. Fuel Lines.
17. Carburettor.
18. Fuel Pump.
19. Injection Pump.
20. Fuel Filter.
21. Oil Filter.

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22. Fuel Hose.
23. Oil Hose.
24. Air Cleaner.
25. Cylinder Gasket (All types of Gaskets & Packings).
26. Nozzles.
27. Nozzles Holders.
28. Fuel Pump Elements.
29. Delivery Valves.
30. Thin Walled Bearings.
31. Ball Bearings.
32. Boden Cables.
33. All types of Oil Seals.
34. Bolts, Nuts, Screws, Etc.

Clutch, Transmission, Propeller Shaft and Differential:

1. Clutch Plates.
2. Clutch Facings.
3. Clutch Carbon or Bearings.
4. Clutch Spring.
5. Clutch Pressure Plate.
6. Clutch Cover.
7. Universal Joint.
8. Propeller Shaft.
9. Transmission Bearings.
10. Disc Wheel.
11. Wheels.
12. Wheel Bolts and Nuts.
13. Front and Rear Wheel Bearings.
14. Differential Bearings.
15. Oil Seals.
16. Brake Linings.
17. Grease Nipples.
18. Bolts, Nuts, Screws, etc.

Chassis Frame, Front Axle and Steering :

1. Leaf Springs.
2. Spring Brackets, Shackles, Hangers (cast type).
3. Shock Absorbers.
4. Hydraulic Brake System.

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5. Vacuum Servo or Air Brakes.
6. Brake Cables.
7. Brake Fluid.
8. Ball Bearings.
9. Roller Bearings.
10. Taper Roller Bearings.
11. Bolts, Nuts, Screws, etc.
12. Suspension Leaf Springs.
13. Suspension Coil Springs.
14. Spring U. Bolts.
15. Spring Centre Bolts.
16. Spring Shackle Bolts.
17. Spring Shackle Pins.
18. Spring Clips.
19. Spring Bushes.
20. Spring Seat.

Electrical Equipments :

1. Dynamos.
2. Starter Motors.
3. Battery.
4. Starter Cables.
5. Wiring Harness.
6. Ignition Coil.
7. Sparking Plugs.
8. Distributor with Vacuum Control.
9. Voltage Regulator.
10. All types of Electrical Cables.
11. All types of Ignition Switches
12. Head Lamps.
13. Tail Lamps.
14. Side Lamps.
15. Fog Lamps.
16. Stop Lamp.
17. Spot Lights.
18. Control Lamps.
19. Direction Indicator.
20. Flashers.

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21. Stop Lamp Switches.
22. Horn, Electrical.
23. Horn Buttons.
24. Electric Bulbs.
25. Bulb Sockets.
26. Wind Shield Wipers.
27. Electrical Fuses.
28. Electrical Fuse Boxes.
29. Contact Brake Points.

Rubber Parts :

1. Tyres.
2. Tubes.
3. Flaps.
4. Fan Belts.
5. All types of Rubber Hoses.
6. Bulb Horn
7. Weather Strip.
8. Door Buffers and similar other rubber components.
9. Silent Block or resilient mountings.

Body :

1. Door Locks.
2. Hinges.
3. Windows for Bus and Trucks.
4. Seats for bus and Trucks.
5. Safety Glass (Laminated or Toughened).
6. Window Regulators.
7. Window Guides.
8. Ornamental Fittings.
9. Upholstery Materials.
10. Trimming Materials.
11. Rear View Mirrors.
12. Dash Board Instruments.
13. Ammeter.
14. Speedometer.
15. Flexible Shafts for Speedometers.
16. Oil Pressure Gauge.
17. Fuel Gauge.

18. Air Pressure Gauge
19. Thermostat.
20. Paints, Lacquer, Varnishes.
21. Sun Shade.
22. Sun Visor.
23. Luggage Carrier.
24. Ash Trays.
25. Door Handles.
26. Bolts, Nuts, Screws, etc.
27. Mascots and Motifs.

Service Equipments :

1. Tool Kits.
2. Starter Handle.
3. Tyre Leavers.
4. Mechanical and Hydraulic Jacks.
5. Hand and Foot Tyre Inflators.
6. Air Pressure Gauges.
7. Lubricating Equipment.

N.B. : "The Vehicle Manufacturers were expected to purchase the items listed above from the Ancillary Industry subject to considerations of quality, delivery and price, it being understood that the vehicle manufacturers would give the necessary assistance and technical guidance to the Ancillary Industry to enable the latter to cater to the O.E. market. If these essential conditions were not fulfilled Government would give consideration for the manufacture of one or more of the above listed items to the Vehicle Manufacturers also. Further, the Vehicle Manufacturers has the option to continue with the manufacture of those of the items which were produced in their own works under their existing production programme.

LIST—'B' :

Items which may be manufactured either by the Vehicle Manufacturers or by the Ancillary Industry

Engines :

1. Cylinder Liners.
2. Connecting Rod Bolts.
3. Starter Gear Ring.
4. Oil Pan.

5. Timing Gear.
6. Valve Seat Inserts.
7. Valve Guides.
8. Water Pump.
9. Fuel Tank.
10. Oil Pump.
11. Tappets.
12. Valve Seat.
13. Engine Mountings

Clutch, Transmission, Propeller Shafts and Differential :

1. Clutch Lever.
2. Clutch Housings.
3. Flywheel Housings.
4. Transmission Case.
5. All types of Transmission Gears (Excluding Bearings).
6. Crown Wheels and Pinion.
7. Differential Gear.
8. Differential Housings.
9. Rear Axle Shafts.
10. Brake Drums.
11. Hubs.

Chassis Frame, Front Axle and Steering :

1. Tie Rods.
2. Tie Rod Ends.
3. King Pin.
4. Steering Column.
5. Steering Gear.
6. Steering Arm.
7. Spring Shackle (forged type).
8. Torsion Bars.

Body :

1. Cabs.
2. Bus Bodies.
3. Truck Bodies.
4. Car Seats.
5. Hub Caps.

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APPENDIX XIII

(*Vide* paragraph 11.4)

Assumed service life of various components and/or Assemblies of Automobiles

(As given by the All India Automobile and Ancillary Industries Association)

Components/Assembly	Cars & Jeeps (Miles)	Commercil Vehicles (Miles)	
1		2	3
1. Pistons . . .	50,000	1,00,000	Petrol
		75,000	Petrol
2. Piston Pins . .	50,000	100,000	
		75,000	Petrol
3. Piston Rings . .	25,000	50,000	
		25,000	Petrol
4. Gaskets (cylinder heads)	20,000	50,000	
..	..	30,000	Petrol
5. Inlet & Exhaust Valves	50,000	80,000	
6. Valve Guides . .	50,000	80,000	
7. Valve Springs . . .	50,000	80,000	
8. Valve Tappets . .	Rarely changed	300,000	
9. Timing Chains/Gears	80,000	100,000	
10. Carburettors . .	Rarely changed	150,000	Petrol
11. Carburettor Repair Kits	25,000	25,000	Petrol
12. Fuel Pumps . .	Rarely changed	150,000	Petrol
13. Fuel Pump Repair Kits	20,000	25,000	Petrol
14. Fuel Injection Pumps	..	Rarely changed	
15. ,, Nozzles .	..	50,000	
16. ,, Nozzle holders	..	Rarely changed	
17. ,, Delivery valves	..	150,000	
18. ,, Pump Elements	..	125,000	
19. Fuel Filters . .	Rarely changed	Rarely changed	
20. Elements . . .	10,000	25,000	

APPENDIX XIII—(*Contd.*)

1	2	3	
21. Air Cleaners . .	Rarely changed	Rarely changed	
22. Elements . . .	10,000	25,000	
23. Water Pumps . .	Rarely changed	150,000	
24. Water Pump Repair Kits.	50,000	25,000	
25. Oil Filters . .	Rarely changed	Rarely changed	
26. Elements . . .	10,000	25,000	
27. Flywheel Ring Gears	75,000	50,000	
28. Radiators . .	100,000	200,000	
29. Oil Seals . .	50,000	25,000	
30. Thinwall Bearings .	50,000	100,000	
31. Tapered Roller Bearings Ball Bearings. .	50,000	75,000	
32. Leaf Springs . .	30,000	50,000	
33. Shock Absorbers .	30,000	75,000	
34. Brake Assemblies (excluding brake linings and hoses).	—	—	
35. Master/Air Cylinder Assy.	Rarely changed	250,000	
36. Mater/Air Cylinder Assy. repair kits.	40,000	50,000	
37. Wheel Cylinder Assy.	Rarely changed	250,000	
38. Wheel Cylinder Assy. repair kits.	40,000	50,000	
39. Brake Linings . .	30,000	25,000	
40. Brake Hoses . .	50,000	50,000	
41. Wheels . . .	Rarely changed	400,000	
42. Starter Motors .	,,	300,000	
43. Generators . .	,,	300,000	
44. Voltage Regulators .	100,000	100,000	
45. Distributors . .	Rarely changed	200,000	Petrol
46. Ignition Coils . .	20,000	50,000	Petrol
47. Sparking Plugs. .	10,000	25,000	Petrol

APPENDIX XIII—(*Contd.*)

1	2	3
48. Windscreen Wiper Motors.	50,000	150,000
49. Clutch Assembly	100,000	100,000
50. Clutch Plates	50,000	75,000
51. Clutch Linings	40,000	30,000
52. Propeller Shafts	Rarely changed	175,000
53. U. J. Cross	75,000	50,000
54. Steering Wheels	Rarely changed	300,000
55. King Pins	..	50,000
56. Tie Rod Ends/Drag Links	50,000	75,000
57. Crown Wheel & Pinions	100,000	150,000
58. Rear Axle Shafts	100,000	100,000
59. Speedometer	Rarely changed	Rarely changed
60. Speedometer Cables	40,000	50,000
61. Fuel Gauge	80,000	100,000
62. Oil Pressure Gauge	80,000	100,000
63. Ammeters	80,000	100,000
64. Electric Horns	Rarely changed	200,000

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APPENDIX XIV

(*Vide* paragraph 11.4)

(*A*) *Estimated Annual Original Equipment and Replacement Requirements of the Automobile Industry from Ancillary Industries by* 1970/71

(As estimated by All-India Automobiles Ancillary Industries Association based on Planning Commission's estimate)

Sl No.	Components/Assembly		Cars & Jeeps	Commercial Vehicles	Total	Trade Circulation@10% Replacement	Grand Total
1	2		3	4	5	6	7
1	Pistons	OE	280,000	510,000	790,000	180,400	2,774,400
		R	428,000	1,376,000	1,804,000		
2	Piston Pins	OE	280,000	510,000	790,000	180,400	2,774,400
		R	428,000	1,376,000	1,804,000		
3	Piston Rings	OE	1,120,000	2,040,000	3,160,000	1,580,800	20,548,800
		R	3,424,000	12,384,000	15,808,000		
4	Gaskets (Cylinder Head) .	OE	70,000	85,000	155,000	75,500	985,300
		R	267,500	487,300	754,800		

5	Inlet & Exhaust Valves . .	OE	560,000	1,020,000	1,580,000	408,100	6,069,100
		R	856,000	3,225,000	4,081,000		
6	Valve Guides. . . .	OE	560,000	1,020,000	1,580,000	408,100	6,069,100
		R	856,000	3,225,000	4,081,000		
7	Valve Springs . . .	OE	560,000	1,020,000	1,580,000	408,100	6,069,100
		R	856,000	3,225,000	4,081,000		
8	Timing Chains/Gears . .	OE	70,000	85,000	155,000	28,200	465,100
		R	66,900	215,000	281,900		
9	Carburettors..	OE	70,000	17,000	87,000	2,900	118,500
		R	..	28,600	28,600		
10	Carburettor Repair Kits . .	R	214,000	172,000	386,000	38,600	424,600
11	Fuel Pumps (Petrol) . .	OE	70,000	17,000	87,000		
		R	..	28,600	28,600	2,900	118,500
12	Fuel Pump Repair Kits . .	R	267,500	172,000	439,500	43,900	483,400
13	Fuel Injection Pumps (Diesel).	OE	..	68,000	68,000		68,000
14	Fuel Injection Nozzles . .	OE		408,000	408,000	..	..
		R	..	2,064,000	2,064,000	206,400	2,678,400
15	Fuel Injection Nozzle Holders	OE	..	408,000	408,000	..	408,000

APPENDIX XIV—(*Contd.*)

1	2		3	4	5	6	7
16	Fuel Injection Delivery Valves	OE	..	408,000	408,000	..	..
		R	..	688,000	688,000	68,800	1,164,800
17	Fuel Injection Elements . .	OE		408,000	408,000	..	..
		R	..	825,000	825,000	82,500	1,315,500
18	Fuel Filters	OE	70,000	85,000	155,000	..	155,000
19	Fuel Filter Elements . .	R	535,000	860,000	1,395,000	139,500	1,534,500
20	Oil Filters	OE	70,000	85,000	155,000	..	155,000
21	Oil Filter Elements . .	R	535,000	860,000	1,395,000	139,500	1,534,500
22	Air Cleaners	OE	70,000	85,000	155,000	..	155,000
22	(a) Air Cleaner Elements .	R	535,000	860,000	1,395,000	139,500	1,534,500
23	Water Pumps . . .	OE	70,000	85,000	155,000	..	..
		R	..	143,300	143,300	14,300	312,600
24	Water Pump Repair Kits. .	R	107,000	860,000	967,000	96,700	1,063,700
25	Fly Wheel Ring Gears . .	OE	70,000	85,000	155,000	..	..
		R	71,300	430,000	501,300	50,100	706,400

26	Radiators	OE	70,000	85,000	155,000	16,100	332,100
		R	53,500	107,500	161,000		
27	Oil Seals	OE	560,000	680,000	1,240,000	773,600	9,749,600
		R	856,000	6,880,000	7,736,000		
28	Thin Wall Bearings . .	OE	1,540,000	2,380,000	3,920,000	837,400	13,131,400
		R	2,354,000	6,020,000	8,374,000		
29	Ball Bearings & Taper Roller Bearings . .	OE	1,540,000	2,040,000	3,580,000	923,400	13,737,400
		R	2,354,000	6,880,000	9,234,000		
30	Leaf Springs	OE	140,000	510,000	650,000		
		R	356,700	2,580,000	2,936,700	293,700	3,880,400
31	Shock Absorbers . . .	OE	280,000	340,000	620,000		
		R	713,300	1,146,600	1,859,900	186,000	2,665,900
32	Brake Assemblies (excluding Brake Linings & Hoses)	OE	70,000	85,000	155,000	..	155,000
33	Master/Air Cylinder Assemblies	R	..	86,000	86,000	8,600	94,600
34	Master/Air Cylinder Assembly Repair Kits.	R	133,700	430,000	563,700	56,400	620,100
35	Wheel Cylinder Assemblies .	R	..	344,000	344,000	34,400	378,400
36	Wheel Cylinder Assembly Repair kit.	R	535,000	1,720,000	2,255,000	225,500	2,480,500

APPENDIX XIV—(*Contd.*)

1	2		3	4	5	6	7
37	Brake Linings	OE	560,000	1,020,000	1,580,000	..	..
		R	1,426,700	10,320,00	11,746,700	1,174,700	14,501,400
38	Brake Hose	OE	70,000	85,000	155,000		
		R	107,000	430,000	537,000	53,700	745,700
39	Wheels	OE	350,000	595,000	945,000		
		R	..	53,800	53,800	5,400	1,004,200
40	Clutch Pressure Plate Assemblies	OE	70,000	85,000	155,000		
		R	53,500	210,000	263,500	26,400	444,900
41	Clutch Plates	OE	70,000	85,000	155,000		
		R	107,000	286,700	393,700	39,400	588,100
42	Clutch Facings	OE	140,000	170,000	310,000	..	..
		R	267,500	1,433,300	1,700,800	170,100	2,180,900
43	Propeller Shafts	OE	70,000	170,000	247,000		
		R	..	245,700	245,700	24,600	517,300
44	U. J. Crosses	OE	140,000	255,000	395,000		
		R	142,700	1,290,000	1,432,700	143,300	1,971,000

45	Steering Wheels . . .	OE	70,000	85,000	155,000		
		R	..	71,700	71,700	7,200	233,900
46	King Pins	OE	..	170,000	170,000		
		R	..	860,000	860,000	86,000	1,116,000
47	Tie Rod Ends/Drga Links .	OE	280,000	340,000	620,000		
		R	428,000	1,146,700	1,574,700	157,500	2,352,200
48	Crown Wheels & Pinions .	OE	70,000	85,000	155,000		
		R	53,500	143,300	196,800	19,700	371,500
49	Rear Axle Shafts . . .	OE	140,000	170,000	310,000		
		R	107,000	430,000	537,000	53,700	900,700
50	Starter Motors . . .	OE	70,000	85,000	155,000		
		R	..	71,700	71,700	7,200	283,900
51	Generators	OE	70,000	85,000	155,000		
		R	..	71,700	71,700	7,200	233,900
52	Voltage Regulators . .	OE	70,000	85,000	155,000		
		R	53,500	215,000	268,500	26,900	450,400
53	Distributors	OE	70,000	17,000	87,000		
		R	..	21,500	21,500	2,200	110,700
54	Ignition Coils . . .	OE	70,000	17,000	87,000		
		R	267,500	86,000	353,500	35,400	475,900

APPENDIX XIV—(*Contd.*)

1	2		3	4	5	6	7
55	Spark Plugs	OE	280,000	102,000	382,000		
		R	2,140,000	1,032,000	3,172,000	317,200	3,871,200
56	Fuel Gauges	OE	70,000	85,000	155,000	27,700	459,600
		R	66,900	210,000	276,900		
57	Oil Pressure Gauges	OE	70,000	85,000	155,000		
		R	66,900	210,000	276,900	27,700	459,600
58	Ammeters	OE	70,000	85,000	155,000		
		R	66,900	210,000	276,900	27,700	459,600
59	Speedometers	OE	70,000	85,000	155,000	..	155,000
60	Speedometer Cables	R	133,800	430,000	563,800	56,400	620,200
61	Windscreen Wiper Motors	OE	70,000	85,000	155,000		
		R	107,000	143,300	250,300	25,000	430,300
62	Electric Horns	OE	140,000	170,000	310,000		
		R	..	107,500	107,500	10,800	428,300

(*B*) *Estimated Annual Original Equipment and Replacement Requirements of the Automobile Industry from Ancillary Industries by* 1970/71

(As estimated by the All India Automobile and Ancillary Industries Association on the basis of the Development council's estimate)

Sl. No.	Components/Assembly		Cars & Jeeps	Commercial Vehicles	Total	Trade Circulation @ 10% of replacement	Grand Total
1	2		3	4	5	6	7
1	Pistons	OE	380,000	450,000	830,000		
		R	456,000	1,344,000	1,800,000	180,000	2,810,000
2	Piston Pins	OE	380,000	450,000	830,000		
		R.	456,000	1,344,000	1,800,000	180,000	2,810,00
3	Piston Rings	OE	1,520,000	1,800,000	3,320,000		
		R	3,648,000	12,096,000	15,744,000	1,574,400	20,638,400
4	Gaskets (cylinder heads). .	OE	95,000	75,000	170,000		
		R	285,000	476,000	761,000	76,100	1,007,100
5	Inlet & Exhaust Valves . .	OE	760,000	900,000	1,660,000		
		R	912,000	3,150,000	4,062,000	406,200	6,128,200

APPENDIX XIV—(*Contd.*)

1	2		3	4	5	6	7
6	Valves Guides	OE	760,000	900,000	1,660,000		
		R	912,000	3,150,000	4,062,000	406,200	6,128,200
7	Valve Springs	OE	760,000	900,000	1,660,000		
		R	912,000	3,150,000	4,062,000	406,200	6,128,200
8	Timing Chains/Gears	OE	95,000	75 000	170,000		
		R	71,200	210,000	281,200	28,100	479,300
9	Carburettors	OE	95,000	15,000	110,000		
		R	..	28,000	28,000	2,800	140,000
10	Carburettor Repair Kits	R	228,000	168,000	396,000	39,600	435,600
11	Fuel Pumps	OE	95,000	15,000	110,000		
		R	..	28,000	28,000	2,800	140,800
12	Fuel Pump Repair Kits	R	285,000	168,000	453,000	45,300	508,300
13	Fuel Injection Pumps	OE	..	60,000	60,000	..	60,000
14	Fuel Injection Nozzles	OE	..	360,000	360,000		
		R		2,016,000	2,016,000	201,600	2,577,600
15	Fuel Injection Nozzle "Holders"	OE	..	360,000	360,000	..	360,000

16	Fuel Injection Delivery Valves .	OE	..	360,000	360,000		
		R	..	672,000	672,000	67,200	1,099,200
17	Fuel Injection Elements .	OE	..	360,000	360,000		
		R	..	806,400	806,400	80,600	1,247,000
18	Fuel Filters	OE	95,000	75,000	170,000	..	170,000
19	Fuel Filter Elements . .	R	570,000	840,000	1,410,000	141,000	1,551,000
20	Oil Filters	OE	95,000	75,000	170,000	..	170,000
21	Oil Filter Elements . .	R	570,000	840,000	1,410,000	141,000	1,551,000
22	Air Cleaners	OE	95,000	75,000	170,000	..	170,000
23	Air Cleaner Elements .	R	570,000	840,000	1,410,000	141,000	1,551,000
24	Water Pumps . . .	OE	95,000	75,000	170,000		
		R	..	140,000	140,000	14,000	324,000
25	Water Pump Repair Kits .	R	114,000	840,000	954,000	95,400	1,049,400
26	Flywheel Ring Gears . .	OE	95,000	75,000	170,000		
		R	76,000	420,000	496,000	49,600	715,600
27	Radiators	OE	95,000	75,000	170,000		
		R	57,000	105,000	162,000	16,200	348,200

APPENDIX XIV—(*Contd.*)

1	2		3	4	5	6	7
28	Oil Seals	OE	760,000	600,000	1,360,000		
		R	912,000	6,720,000	7,632,000	763,200	9,755,200
29	Thinwall Bearings . . .	OE	2,090,000	2,100,000	4,190,000		
		R	2,508,000	5,880,000	8,388,000	838,800	13,416,800
30	Ball & Taper Roller Bearings .	OE	2,090,000	1,800,000	3,890,000		
		R	2,508,000	6,720,000	9,228,000	922,800	14,040,800
31	Leaf Springs	OE	190,000	450,000	640,000		
		R	380,000	2,520,000	2,900,000	290,000	3,830,000
32	Shock Absorbers . . .	OE	380,000	300,000	680,000		
		R	760,000	1,120,000	1,880,000	188,000	2,784,000
33	Brake Assembly (excluding Brake Linings and Brake Hoses).	OE	95,000	75,000	170,000	..	170,000
34	Master/Air Cylinder Assembly	R	..	84,000	84,000	8,400	92,4000
35	Master/Air Repair Kits . .	R	142,500	420,000	562,500	56,300	618,800
36	Wheel Cylinder Assembly .	R	..	336,000	336,000	33,600	369,600
37	Wheel Cylinder Repair Kits .	R	570,000	1,680,000	2,250,000	225,000	2,475,000

38	Brake Linings . . .	OE	760,000	900,000	1,660,000		
		R	1,520,000	10,080,000	11,600,000	1,160,000	14,420,000
39	Brake Hoses	OE	95,000	75,000	170,000		
		R	114,000	420,000	534,000	53,400	757,400
40	Wheels	OE	475,000	525,000	1,000,000		
		R	..	52,500	52,500	5,300	1,057,800
41	Clutch Pressure Plate Assembly	OE	95,000	75,000	170,000		
		R	57,000	210,000	267,000	26,700	463,700
42	Clutch Plates . . .	OE	95,000	75,000	170,000		
		R	114,000	280,000	394,000	39,400	433,400
43	Clutch Facings . . .	OE	190,000	150,000	340,000		
		R	285,000	1,400,000	1,685,000	168,500	2,193,500
44	Propeller Shafts . . .	OE	95,000	150,000	245,000		
		R	..	240,000	240,000	24,000	509,000
45	U. J. Cross	OE	190,000	225,000	415,000		
		R	232,000	1,260,000	1,492,000	149,200	2,056,200
46	Steering Wheels . . .	OE	95,000	75,000	170,000		
		R	..	70,000	70,000	7,000	247,000
47	King Pins	OE	..	150,000	150,000		
		R	..	840,000	840,000	84,000	1,074,000

APPENDIX XIV—(*Contd.*)

1	2		3	4	5	6	7
48	Tie Rod Ends/Drag Links .	OE	380 000	300,000	680,000		
		R	456,000	1,120,000	1,576,000	157,600	2,413,600
49	Crown Wheel & Pinions . .	OE	95,000	75,000	170,000		
		R	57,000	140,000	197,000	19,700	386,700
50	Rear Axle Shafts . . .	OE	190,000	150,000	340,000		
		R	114,000	420,000	534,000	53,400	927,400
51	Starter Motors . . .	OE	95,000	75,000	170,000		
		R	..	70,000	70,000	7,000	247,000
52	Generators	OE	95 000	75,000	170,000		
		R	..	70,000	70,000	7,000	247,000
53	Voltage Regulators . .	OE	95 000	75,000	170,000		
		R	57,000	210,000	267,000	26,700	463,700
54	Distributors . . .	OE	95,000	15,000	110,000		
		R	..	21,000	21,000	2,100	133,100
55	Ignition Coils . . .	OE	95,000	15,000	110,000		
		R	285,000	84,000	369,000	36,900	515,900

56	Spark Plugs	OE	380,000	90,000	470,000		
		R	2,280,000	1,008,000	3,288,000	328,800	4,086,800
57	Fuel Gauge	OE	95,000	75,000	170,000		
		R	71,200	210,000	281,200	28,100	479,300
58	Oil Pressure Gauge . .	OE	95,000	75,000	170,000		
		R	71,200	210,000	281,200	28,100	479,300
59	Ammeters	OE	95,000	75,000	170,000		
		R	71,200	210,000	281,200	28,100	479,300
60	Speedometers . . .	OE	95,000	75,000	170,000	340,000	340,000
61	Speedometer Cables . .	R	142,500	420,000	562,500	56,000	618,800
62	Electric Horns . . .	OE	190,000	150,000	340,000		
		R	..	210,000	210,000	21,000	571,000
63	Windscreen Wiper Motors	OE	95,000	75,000	170,000		
		R	114,000	140,000	254,000	25,400	449,400

APPENDIX XV

(*Vide* Paragraph 12.8)

Progress of import substitution in the Ancillary Industry

1. In order to study the progress made by the various ancillary manufacturers in substituting imported parts and raw materials with indigenous ones, we had issued a special questionnaire to a number of ancillary manufacturers whose products are made up of several parts and components some of which have to be imported. We received replies from 20 such manufacturers and a statement has been compiled showing the name of the item manufactured, the total number of parts in the component, the total number of parts imported at the commencement of production, the number of parts imported at the time of reporting and the number of parts expected to be imported in the future. Similar information was also requested in respect of raw materials used in the manufacture of various ancillaries. From the statement attached it will be seen that whereas some manufacturers particularly those making radiators, gaskets etc. Started from the raw material stage, there are several others like manufacturers of instruments, shock absorbers, propeller shafts and electrical equipment who started by importing the ancillaries in a C.K.D. condition and have progressively substituted imported parts with indigenously manufactured ones. From the statement it will be seen that the number of parts which are expected to be imported in the future by the various companies are very few and in several cases none. The parts which will have to be imported in the future are of a very specialised nature, the production of which has not bten taken up so far in the country such as circlips, worm and bearing cage for steering gear, needle rollers for propeller shafts, magnet assembly and compensator ring for speedometer, diaphragm for brake equipment, special valves for shock absorbers, contact points for horns, spiral and magnetic rings for instruments, resistance wires for electrical instruments, capillary tubes, heat sensor silicon diodes etc. for instruments. The percentage of the total number of parts in the entire assembly of the few parts which will still have to be imported in future is very small.

2. As far as raw materials are concerned, the picture appears to be very much different. Most of the units continue to import the raw materials as before. Some units have substituted a few items of raw materials; the rest will have to be imported for some time yet e.g. various varieties of steels, cutting tools and special tools, non-ferrous metals, chemicals, various raw materials for the manufacture of gaskets etc. It must be conceded that indigenisation of raw materials is not within the control of the ancillary manufacturer but where suitable raw material or an acceptable substitute is available, it would be desirable to make adjustments in design or manufacturing procedure to use indigenous materials.

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APPENDIX XV—(*Contd.*)

Name of item	PARTS					Raw Materials and Consumable Stores				
	Total No. of parts	No. of imported parts at commencement	No. of imported parts in 1966	No. of parts expected to be imported in future	Remarks	No. of items of raw materials and stores	No. imported commencement	No. imported in 1966	No. expected to be imported in future	Remarks
1	2	3	4	5	6	7	8	9	10	11
1. *Best & Company Pvt. Ltd.*										
Dynamo . .	14	3 (1961)	3	3	C.E. bearing (Modified), Seeger Circlip, keys for shaft	2 (raw materials)	2	2	2	Varieties of steel
Starter . .	15	3 (1961)	3	3	Ditto.	2(raw materials)	2	2	2	Ditto.
2. *Ex-Cell-O India Ltd.*										
Propeller Shaft .	30	30 (1961)	3	1 (1970)	Needle roller	Not indicated	Entirely imported	Not indicated	Nil 1970r)	Steel castings and cutting tools are imported at present.
Steering Gear .	45	(Not indicated) Started in 1966.	17	2	Shaft assembly worm; bearing cage assembly.	..	..	.	..	..
3. *Gabrial India Ltd.*										
Shock Absorber .	32	32 (1961)	1	Nil (1970)	Piston casting is imported	Not indicated	..	..	..	Free cutting M.S. Tubes bars and rods, spring steel wire and copper and zinc are imported.

4. *International Instruments Pvt. Ltd.*

Speedometer 100 m.m.	58	57 (1961)	9	Nil (1970)	Subject to certain items being available indigenously.	..	..	..	..	..
Speedometer 85 m.m.	53	52 (1961)	9	Nil (1970)	Ditto.	..	..	..	..	*Raw Materials:* The raw materials used are steel strips (imported) and rods (imported and indigenous) bourden tube (imported) dial sheet steel (indigenous now), aluminium rods and sheets (indigenous) and brass rods and strips in coils, (indigenous). It is expected that by 1970, the items now imported may be locally available.
Speedometer 80 m.m.	54	53 (1961)	10	Nil (1970)	Ditto.	..	..	..	..	
Speedometer 48 m.m.	36	34 (1964)	16	2@ (1970)	Ditto. @Magnet assembly compensation ring.	..	..	..	..	
Double Pressure Gauge	26	26 (1961)	2	1* (1970)	*Double Segment assembly.	..	..	..	..	.. *Consumable tores:* A large number of stores items are procured locally. The items now imported are (i) master thread gauges, (ii) plug gauges, (iii) Screw thread ring and limit gauges (iv) Limit plug gauges (v) Heavy comparator stand, (vi) thread measuring accessory set, (vii) screw thread measuring wire set, (vii) dial comparator (ix) broaches (x) dog collets closed type (xi) machine taps (xii) straight shank twist drills, (xiii) micro taper reamers (xiv) round precision dies (xv) machine reamers, (xvi) metal slitting saws with fine teeth, (xvi) micro precision drills and (xviii) turned gear labs.
52 m.m. Single Pressure Gauge.	28	27 (1961)	4	Nil (1970)	Subject to certain items being available indigenously.	..	..	..	..	
60 m.m. Single Pressure Gauge.	30	29 (1961)	4	Nil (1970)	Ditto.	..	..	..	..	
52 m.m. Temperature Gauge.	39	38 (1961)	7	Nil (1970)	Subject to certain items being available indigenously.	..	..	..	..	
60 m.m. Temperature Gauge	37	36 (1961)	6	Nil (1970)	Ditto.	..	..	..	..	
Fuel Gauge	28	27 (1961)	2	Nil (1970)	Ditto.	..	..	..	..	
Tank Unit	23	6 (1964)	2	Nil (1970)	Ditto.	..	..	..	..	
Vacuum Gauge .	29	28 (1961)	4	Nil (1970)	Ditto.	..	..	..	..	
Ampere Meter .	27	26 (1961)	4	Nil (1970)	Ditto.	..	..	..	..	

APPENDIX XV—(Contd.)

1	2	3	4	5	6	7	8	9	10	11
										Of these the items at sl. nos. (ii), (v), (vi) (vii), (iii), (ix), (x), (xi), (xii)), (xiii), (xv), (xvii), and (xviii) will, continue to be imported in 1970.
					5. Payen Talbros Pvt. Ltd.					
Gaskets of various types.	Commenced manufacture from Raw material stage.				..	34	29 (1961)	21	21*	*Oaken cork, flexoid, fibrol. sizoid, carbex, treated paper, cyclops, presspaha, asbestos, zinc plated steel, tinplate, cupro nickel, asbestos hemp impregnated, brass, DDQ steel, copper, hard red fibre are the raw materials that will need to be imported in 1970. The consumable srores are holl cutters and jigsaw blades.
					6. Sundaram Clayton Ltd.					
Air Brake and Servo mechanism (Compressors, Servos, pressure Regulator, valves, Air Tanks, Brake Chambers, etc).	99	56 (1965)	22	5	(a) Spring steel not available locally. (b) Diaphragms (for brake equipment) containing inner layer made from special type of nylon will be imported. (c) Rubber hose will be partially imported as local manufacturers are unable to meet full requirement. (d) One of the weld Bolts involves polygon turning facilities which are not available. (e) Springs will be partially imported.	57	52 (1965)	53	45	Certain varieties of steel will have to be imported Regarding stores, chasers, broaches, drills taps, die heads and gauges form tools, high speed steel milling cutters, serrated blade cutters and inserts, tool holders, silicone fluid, valveline grease lapping compound, molybdenum based lubricant, trichloroethy lene recorder chart and inks will be the imported items in 1970.

7. Hydraulics Ltd.									
AT 6/7 Type Shock Absorber.	32	23 (1961)	1	1	Piston ring	13	5 only) were used in 1961)	6	6 P.W.Q. rods and strips trichloroethlene and rubber bonded abrasive wheel plus Bundy Tubes, CRCA strips.
AT 7 Type shock Absorber.	43	14 (1961)	3	3	Rebound valve spindle, rebound valve piston ring.	18	14	10	10 Ditto.
AT 9 Type shock Absorber.	38	13 (1961)	3	3	Ditto.	16	14	8	8 Ditto.
AT 10 Type shock Absorver	47	43 (1963)	10	10	Above 3 items plus ferrule, spacing tube nuts & bushes.	15	6	5	5 Ditto.
8. Sharco Industries Pvt. Ltd.									
Electric Horn Model MS-34	53	37 (1961)	3	2	Contact points	24	20 (1964)	20	3 Varieties of steel
Electric Horn Model MS-11	58	1(in 1965 model introduced in that year).	1	1	Stack assembly HP 3	28	6 (1965)	6	3 Ditto.
Electric Horn Model TC-F 1	35	3 (Do.)	Nil	Nil.	..	18	9 (1965)	9	2 Ditto.
9. Usha Automobile & Engineering Pvt. Ltd.									
Door Lock & Remote Control Ambassador	59	3 (1962)	Nil.	Nil.	..	9	7 (1962)	7	7 D. D. Sheets B.P. strips, S. S. strips and wire, lex and black steel bar.
Lock—TMB . .	20	Started in 1966	Nil	Nil.	..	2	..	2	2 D. D. sheets bright steel bar.
Commercial Door Lock.	23	Nil (1965)	,,	,,	..	4	4	4	4 D. D. sheets, M. S. strip extruded and black bar S.S. wire.
Commercial Remote Control	15	Nil (1965)	,,	,,	..	5	5	5	5 D. D. sheets, bright Red and extruded bar, S.S. wire and strip.
Door Lock & Remote Control Fiat (New type).	40	3 (1965)	,,	,,	..	4	4	4	4 ..
Door Lock-Fiat (Old type).	26	2 (1963)	Discontinued in 1965		..	4	4	(Discontinued in 1965)	

APPENDIX XV–(Contd.)

1	2	3	4	5	6	7	8	9	10	11
Key Operated Locking Device	40	22 (1966)	13	1	Phospher bronze spring	8	6	6	6	Zinc, D. D. Sheet, brass strip, statinless steelstrip, brass rod. S. S. Wires,
					10. *Autometers Ltd.*					
Speedometer	52	52 (1961)	12	3	Spiralspring body magnet	24	Not given	17	17	Deep drawing steel sheets, spring steel sheets, M.S. sheets and rods, electrical grade aluminium sheets and wires, dynamo steel sheets, phosphorus bronze spring quality sheets silver steel rods, electrical resistance wire, zinc ignots, copper ignots nylon moulding powders. Solder silicon oils, apeizon oils XYLOL, nichrome wire, trichloroethylene.
Fuel Gauge . .	45	45 (1961)	6	2	Magnets					
Oil Pressure Guage	29	29 (1961)	5	3	Transmission work, springs					
Amperemeter .	33	33 (1961)	3	1	Magnets					
Warning light .	10	10 (1961)	Nil	Nil						
Float Unit . .	22	Started (1966)	7	2	Resistance wire, float,					
Temperature Gauge	36	36 (1962)	13	6	Transmission work, springs, capillary and filling tubes, heat sensor					
Double Pressure Gauge	28	28 (1962)	13	4	Transmission work, sprngs body.					
					11. *Carburettors Ltd.*					
Carburettor . .	59	58 (1961)	27	Not given	..	7	Not given	5	2	Brass tubes & CRCA Strips.
Fuel Pump . .	39	37 (1964)	10	Nil	..	8	Not given	3	3	Diaphragm material, CRCA strips, Bundy tubes.
					12. *Gaskets & Oilseals Pvt. Ltd.*					
Gaskets & Radiators	Information not furnished				..	13	7 (1963)	7	7	Copper ingots zinc, lead steel strips, asbestos M.B oil paper, BTA-70 paper.

13. *Prestolite of India Ltd.*

Distributor	23	Not given	18	5 (1969)	Backlite powder, breaker arm, complete assy., kraft paper, condenser insulation.	32	Not given	12	@12 (1969)	@Stainless steel, monal-metal steel varieties.
Wiper Motor Assembly	12	Do.	6	1 (1969)	C.E. head assy.	3	Do.	Nil	Nil	..
Voltage Regulator	34	32 (1964)	18	8 (1969)	Resistor, tubes, nut blank, gasket, cover, base, insulation.	14	11 (1964)	4	4 (1969)	Steel varieties
Ignition Coil	32	21 (1964)	9	9 (1969)	Tubes, guide rings, self tapping screw, ballast housing, bracket, resistor, lock washer & nut assy.	10	8 (1964)	6	3 (1969)	Kraft paper, steel strip, electric grade steel.
Contact Sets	4	4 (1964)	1	Nil (1969)	..	..	..	..	..	..

14. *Automobile Products of India Ltd.*

Clutch Cover Assembly	11	8 (1961)	4	Nil (1970)	..					*Bundy tubes, Duralumi-nium bars.
Clutch D.P. Assembly	12	8 (1961)	Nil	Nil (1970)	..	14	14 (1963)	13	*6 (1970)	Broaches, hobs gear shapers misc. special tools.
Brake Assembly	26	22 (1961)	5 (1970)	Nil	..	..	..	..	..	Procurements of raw materials indigenously depends upon availability.

15. *Escorts Ltd.*

Shock Absorbers T.M.B.	27	16 (1964)	4	3	Sealing ring piston, Viton seals and Guide disc.	..	8	6	6 (1970)	Tubes, spring steel strips, trichlroethylene.
Shock Absorbers—light Vehicles.	26	..	13	3	Spring disc. sealing ring piston and spring washers					

16. *Injecto Pvt. Ltd.*

Carburettors	20	19 (1965)	19	Nil (1970)	..	8	4 (1965)	4	2 (1970)	Zinc, bronze strips.

APPENDIX XV—(Contd.)

1	2	3	4	5	6	7	8	9	10	11
					17. Globe Auto Electricals Ltd.					
Ignition Coil . .	10	4 (1963)	2	Nil (1970)	..	9	7 (1963)	5	5	CRCA steel (28 & 30 Gauges) leatheroid paper, special Craft paper, permacel adhesive.
Wiper Motor for Cars	14	13 (1963)	2	Nil	..	15	9 (1964)	2	2	Spring steel, leatheroid paper.
Mounting Braket Assembly .	5	4 (1965)	Nil	,,	..	..	..	..	..	..
Wiper Motor for trucks	27	21 (1963)	2	,,	..	15	6 (1964)	2	2	Spring steel leatheroid paper.
Distributor .	19	18 (1963)	6	,,	..	6	3 (1964)	2	1	Spring steel
Regulator . .	17	9 (1964)	2	,,	..	8	4 (1964)	3	3	Nichrome wire, bimetallic sheets, leatheroid paper.
Ignition Switch .	11	7 (1965)	5	,,	..	3	Nil	Nil	Nil	..
Alternator . .	22	20 (1963)	5		1 Silicon Diodes	11	7 (1964)	2	1	Fish paper.
Starting Motors .	20	15 (1964)	5	Nil	..	8	7 (1964)	4	3	Fish paper, bone fibre melamine glass tubings.
D. C. Generator .	26	19 (1964)	5	,,	..	9	4 (1964)	3	1	Fish paper.
					18. Victor Gaskets India Ltd.					
Gaskets . .	Does not apply.	Nil	Nil	Nil	..	9	8	8	8	The imported materials required are copper, tinplate, C.A.F. jointings, asbestos millboard, manilatag paper, fibre jointings, tool and alloy steel and shimsteel.

19. *Lucas—TVS Ltd.*

CG 55 Generator .	106	45 (1965)	11	3	Shakeproof washer, bearing, spring, rivet.	41	38 (1964)	18	7	Copper strips, Lewco glass, copper braided wire. brass tubes, empire sleevings.
C40 Dynamo. .	74	28 (1965)	11	Nil						
CA 45 Starter .	147	..	37	1	Assy. pinion Dowel, eccetric pin, drive assembly screwrivet, wheel box assy.					
M 3 PE Starter .	75	..	6	3						
Winds creen Wiper.	77	74 (1965)	7	3						
Distributor . .	120	..	12	1	Capacitor final assembly •					Under cutting carbide cutter, air driven tools.
FL 5 Flasher Unit	39	..	2	1	Rivet					

20. *Teksons Pvt. Ltd.*

TMB Radiator .	Started from Raw material stage					9				Brass sheets, bars, pipes strips ,copper strips, tin, CRCA sheets

APPENDIX XVI

(*Vide* Paragraph 14.1)

List of Indian standards for Automobile Industry

1. STRUCTURAL & METALS

(a) *Ferrous*

Standards Published :

IS : 210—1962	Grey iron castings (*revised*).
IS : 224—1958	Pig iron (coke) (*revised*).
IS : 225—1957	Pig iron charcoal (*revised*)
IS : 226—1962	Structural steel (standard quality ((*third revision*).
IS : 280—1962	Mild steel wire for general purposes (*revised*)
IS : 412—1962	Expanded metal steel sheets for general engineering purposes (*revised*).
IS : 513—1964	Cold rolled carbon steel sheets (*revised*).
IS : 648—1962	Steel sheets for magnetic circuits of power electrical apparatus (non-oriented steel) (*revised*).
IS : 727—1964	Hard drawn carbon steel wire for springs for general engineering purposes (*revised*).
IS : 808—1964	Rolled steel beam, channel and angle sections (*revised*).
IS : 811—1961	Cold formed light gauge steel structural sections
IS : 961—1962	Structural steel (high tensile) (*revised*)
IS : 1029—1956	Hot rolled steel strips (baling)
IS : 1030—1962	Steel castings for general engineering purposes (*revised*).
IS : 1079—1963	Hot rolled carbon steel sheet and strip (*revised*)
IS : 1148—1964	Rivet bars for structural purposes (*revised*)
IS : 1173—1957	Rolled steel sections, tee bars
IS : 1570—1961	Schedules for wrought steels for general engineering purposes.

IS : 1730—1962	Dimensions for steel plate, sheet and strip for structural and general engineering purposes.
IS : 1731—1961	Dimensions for steel flats for structural and general engineering purposes.
IS : 1732—1961	Dimensions for round and square steel bars for structural and general engineering purposes.
IS : 1962—1961	Code for designation of steel
IS : 1964—1963	Dimensions for angle sections with legs of unequal width and thickness
IS : 1865—1961	Iron casting with spherical or nodular graphite
IS : 1870—1965	Comparison of Indian and Overseas standards for wrought steels for general engineering purposes.
IS : 1871—1965	Commentary on Indian Standard schedules for wrought steels for general engineering purposes.
IS : 1875—1961	Carbon steel bars, billets, blooms and slabs for forgings.
IS : 1879—1961	Malleable cast iron pipe fittings
IS : 1956—1962	Glossary of terms relating to iron and steel
IS : 1977—1962	Structural steel (ordinary quality)
IS : 2004—1962	Carbon steel forgings for general engineering purposes.
IS : 2039—1964	Steel tubes for bicycle and allied purposes
IS : 2049—1963	Colour code for the identification of wrought steels for general engineering purposes.
IS : 2062—1962	Structural steel (fusion welding quality)
IS : 2073—1962	Carbon steel bars for production of machined parts for general engineering purposes.
IS : 2107—1962	Whiteheart malleable iron castings
IS : 2108—1962	Blackheart malleable iron castings
IS : 2484—1964	Dimensions for steel tubes for bicycle purposes
IS : 2567—1965	Cold rolled steel strip for springs
IS : 2517—1963	Bright bars for threaded components
IS : 2589—1964	Hard drawn steel wire for upholstery springs
IS : 2591—1964	Hot rolled steel bars for threaded components
IS : 2540—1964	Pearlitic malleable iron castings

IS : 2644—1964	High tensile steel castings
IS : 2707—1964	Carbon steel castings for surface hardening
IS : 2708—1964	1.5 percent manganese steel castings
IS : 2749—1964	Austenitic iron castings
IS : 2841—1964	Pig iron for special purposes
IS : 2856—1954	Carbon steel castings suitable for high temperature service (fusion welding quality).
IS : 3074—1965	Steel tubes for automotive purposes
IS : 3431—1965	Steel for volute, helical and laminated springs for automotive suspension

Standards under preparation:

Steel tubes for automobile purpose
Phosphate treatment of iron and steel
Comparison of Indian and Overseas standards for wrought steels
Steel for laminated springs (automobiles)
Steel for volute and helical springs (automobiles).
Annealed steel wire for oil hardened and tempered springs for valve control.
Steel for spring washers
Commentary on Indian Standards for wrought steel.

(b) *Non-Ferrous*

Standards Published:

IS : 25—1961	Antifriction bearings alloys (*revised*)
IS : 28—1958	Phosphor bronze ingots and castings (*revised*)
IS : 193—1956	Soft solder (*revised*)
IS : 292—1961	Brass ingots and castings (*revised*)
IS : 306—1960	Tin bronze ingots and castings (*revised*)
*IS : 320—1962	High tensile brass rods and sections (*revised*)
IS : 617—1959	Aluminium and aluminium alloy ingots and castings for general engineering purposes (*revised*)
IS : 713—1955	High purity zinc and zinc base alloy ingots for die casting.
IS : 733—1956	Wrought aluminium and aluminium alloys, bars, rods and sections.

*IS : 734—1956	Wrought aluminium and aluminium alloys, forgings (for general engineering purposes) (*revised*
*IS : 735—1956	Wrought aluminium and aluminium alloys, forgings stock (for general engineering purposes).
*IS : 736—1956	Wrought aluminium and aluminium alloys, plate (for general engineering purposes).
*IS : 737—1955	Wrought aluminium and aluminium alloys, sheet and strip (for general engineering purposes).
*IS 738—1956	Wrought aluminium and aluminium alloys, tube (for general engineering purposes).
*IS : 739—1956	Wrought aluminium and aluminium alloys, wire (for general engineering purposes).
*IS : 740—1956	Wrought aluminium and aluminium alloys, rivet stock.
IS : 742—1955	Zinc base alloys die castings.
IS : 319—1962	Free cutting brass rods and sections (*revised*)
IS : 1068—1958	Copper, nickel and chromium electroplated coatings
IS : 1284—1958	Wrought aluminium and aluminium alloys, both and screw stock (for general engineering purposes)
IS : 1285—1958	Wrought aluminium and aluminium alloys, extruded round tube and hollow sections.
IS : 1337—1959	Hard chromium plating on steel.
IS : 1545—1960	Solid drawn copper alloy tubes
IS : 1572—1960	Cadmium plating
IS : 2371—1963	Solid drawn copper-alloy tubes for condensors, evaporators, heaters and coolers using saline and hard water.
IS : 2601—1964	Brass anodes for electroplating
IS : 2602—1964	Cadmium anodes for electroplating
IS : 2605—1964	Zinc anodes for electroplating
IS : 2676—1964	Dimensions for wrought aluminium and aluminium and aluminium alloys, sheet and strip.
IS : 2677—1964	Dimensions for wrought aluminium and aluminium alloys, plate.
IS : 2673—1964	Dimensions for wrought aluminium and aluminium alloys, drawn tubes.
IS : 3331—1965	Copper foil and brass strip for radiator cores.

Standards under Preparation :

Copper and brass foils for radiator cores
Code of practice for cleaning of basis metals prior to electroplating
Code of practice for hot dip galvanizing of iron and steel

Standards on the Programme of Formulation :

Structural section of aluminium and aluminium alloys
Code of practice for electroplating
Copper strips and foils for copper gasket

(c) *Welding*

Standards Published:

IS : 814—1965	Covered electrodes for metal arc welding of milds steel (*revised*).
*IS : 815—1955	Classification and coding of covered electrode for metal arc welding of mild steel and low alloy high tensile steels.
IS : 816—1956	Code of practice for use of metal arc welding for general construction in mild steel.
*IS : 819—1957	Code of practice for resistance spot welding for light assemblies in mild steel.
IS : 1261—1959	Code of practice for seam welding in mild steel
IS : 1278—1958	Filler rods and wires for gas welding
IS : 1395—1964	Molybdenum and chromium molybdenum low alloy steel electrodes for metal arc welding (*revised*).
IS : 2680—1964	Filler rods and wires for inert gas arc welding
IS : 2811—1964	Recommendation for manual tungsten inert gas arc welding of stainless steel.
IS : 2812—1964	Recommendation for manual tungsten inert gas arc welding of aluminium and aluminium alloys
IS : 2927—1964	Brazing alloys.

Standards under Preparation :

Spot welding electrodes

Hose fittings for welding and cutting appliances

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*under revision.

2. MECHANICAL AND COMPONENTS

Standards Published:

IS : 577—1954	upholstery leather
IS : 810—1957	Inlet and exhaust valves for internal combustion engines
IS : 1001—1956	Fuel pump diaphragm fabric (a) Synthetic rubber proofed. (b) Varnish proofed.
IS : 1135—1957	General requirements for leaf springs for automobile suspension.
IS : 1259—1962	Vinyl coated fabrics (leather cloth) (*revised*)
IS : 1421—1964	Cellulose nitrate coated fabric (*revised*)
IS : 1543—1964	Single cylinder fuel injection pumps (*revised*)
IS : 1600—1960	Code for type testing of constant speed internal combustion engines for general purposes.
IS : 1601—1960	Performance of constant speed internal combustion engines for general purposes.
IS : 1602—1960	Code for type testing variable speed internal combustion engines for automotive purposes.
IS : 1603—1960	Performance of variable speed internal combustion engines for automotive purposes.
IS : 1741—1960	Latex foam rubber products.
IS : 2396—1963	Braided hose of rubber for petrol and diesel fuels
IS : 2553—1964	Safety glass (*revised*)
IS : 2634—1964	Helical springs for automobile suspension.
IS : 2742—1964	Automotive brake lining.
IS : 2765—1964	Radiator hoses.
IS : 3169—1965	Two-stage, one litre fuel filters for diesel engines.
IS : 3170—1965	Dimensions for injection nozzles size 'S' for diesel engines.
IS : 3171—1965	Dimensions for injection nozzles holder size 'S' for diesel engines.
IS : 3172—1965	Banjo connections for fuel injection equipment for diesel engines.

IS : 3173—1955	High pressure connections for fuel injection equipment for diesel engines.
IS : 3174—1955	Banjo bolts for fuel injection equipment for diesel engines .
IS : 3175—1965	Copper washers for fuel injection equipment for diesel engines.
IS : 3511—1966	Cylinder bore diameters for internal combustion engines.

Standards under Preparation :

Hydraulic shock absorbers
Clutch facing for automotive transmission (sent to press)
Portable jacks, mechanical and hydraulic
General requirements for piston rings
General requirements for automobile lighting and signalling device
Trailers
Foot tyre inflators
General requirements for positioning and routing of engine
Exhaust pipes in automobiles (sent in wide circulation)
Vehicle performance code
General requirements for steering wheels
Slotted countersunk head screws and set screws for automobiles
Hexagonal bolts, nuts and screws for automobiles
Cross recessed pan head, slotted round and cheese head screws for automobiles.
Spring washers, plain washers and tooth lock washers for automobile
Rivets and split cotter pins for automobiles
Methods of test for diesel engine fuel filters
Automotive radiators

Standards on the Programme of Formulation :

Leaf springs assemblies
Spring pin and bushes
Spring hangers and shackles
Shackle pins and bushes
Wheel rating and standard data
Wheeled vehicle safety code
Tracked vehicle yardage rating

Fasteners
Tube and fittings
Fuel hose
Tyre levers
Vehicle loading
T-sign plate and reflex type of reflector
Railway jacks
Platform jacks
Speedometer
Motor rear axles
Seat belt anchorage points
Industrial types of jacks
Radiator cap
Drain cock
Hand tyre inflators
Methods of test for performance of air filters for internal combustion engines.
Piston pins (gudgeon pins).
Circlips
Wet and dry type liners for internal combustion engines
Valve guide and valve seat inserts
King pins and ball studs
Keys and keyways for internal combustion engines
Direction of rotation and identification numbers for cylinders of internal combustion engines of marine, stationary and vehicular type.
Proforma for test certificate
Flange mountings for internal combustion engines
Method of analysis of exhaust of internal combustion engines
Threads for inlet and outlet openings
Derating charts
Cast iron pistons
Aluminium alloy pistons
Code of practice for installation of land engines
Performance and testing of diesel engines for rail traction purposes
Driving devices, including pulleys normally used
Tyre, tubes and rims
Rubber component used in automobile vehicles (Hydraulic brake seal cups and grommets are taken up at the first instance).

3. ELECTRICAL

Standard Published ;

IS : 395—1962	Lead acid storage batteries (light-duty) for motor vehicles (*second revision*).
IS : 985—1962	Lead acid storage batteries (heavy duty) for motor vehicles (*revised*).
IS : 1062—1963	Methods of test for sparking plugs (*revised*)
IS : 1063—1963	14 mm sparking plugs (*revised*)
IS : 1145—1962	Lead acid storage batteries for motor cycle-auto rickshaw and similar vehicles (*revised*)
IS : 1146—1960	Hard rubber containers for motor vehicle batteries.
*IS : 1606—1966	Schedule for automobile lamps (*under print*)
IS : 1884 (Part I)—1961	Automobile electric horns Part I : DC Vibrating type.
IS : 1884 (Part II)—1963	Automobile electric horns Part II : Wind fone type.
IS : 2077—1962	Automobile electric horn relays
IS : 2081—1962	Taper terminal cable connectors for automobile batteries.
IS : 2325—1963	Ignition coils
*IS : 2465—1963	Cables for motor vehicles
IS : 2577—1963	Cartridge fuse-links for automobiles
IS : 2646—1964	Generators dynamos for (automobiles)
IS : 3028—1965	Method of measurement of noise emitted by motor vehicles sound level metres for measurement of noise emitted by motor vehicles.
IS : 3105—1966	General requirements for automobile lighting and signalling devices.
IS : 3141—1965	Starters for automobiles
IS : 3563—1966	Automobile head lights (replaceable bulb type)

Standards under Preparation ;

Head lights (replaceable bulb type)

Side lights, tail lights, parking lights, stop lights, and direction indicators.

Wind screen wipers.
Method of test for distributors.
Methods of tests for horn switches for automobiles
Flashers for direction indicators
Foot-operated head-light dipswitches for automobiles
Head-light switches for automobiles
Fuse clip/fuse box for automobiles
Colour code for automobile wiring

Standards on the programme of Formulation

Voltage regulator
All type of electrical switches used in automobiles
Stop light switches for automobiles
Code of practice for use of lighting and signalling equipment on cars and commercial vehicles.
Flasher units
Dimensions for generators
Dimensions for alternators for automobiles
Dimensions for starters
Headlights (sealed beam type)
Fuel gauges
Electric fuel pump
A.C. electric horns for motorcycles and scooters
Ammeters
Magnets
Photometric testing of headlights

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4. CHEMICAL (LUBRICANTS, FUELS ETC.)

Standard Published

IS : 266—1961	Sulphuric acid (covers battery grade acid) (*revised*).
IS : 317—1959	Automotive hydraulic brake fluid
IS :493—1958	Machinery and spindle oils (amended)
IS : 496	Internal combustion engine lubricating oils (revision in press).
*IS : 1002—1956	Multipurpose grease No. 1, No. 2 and No. 3
IS : 1069—1957	Water for storage batteries

IS : 1118—1957	Gear lubricant, multipurpose (extreme pressure gear oil).
IS : 1277—1958	Gear lubricant, regular
IS : 1585—1960	Motor gasoline, 79 octane
IS : 1628—1960	Oil, lubricating, axle, regular and premium
IS : 2297—1963	Gear lubricants, compounded
IS : 2560—1963	Rubber, based adhesives for tyres and tubes non-curing.
IS : 2561—1963	Rubber, based adhesives for the automoblie industry.
IS : 2562—1963	Rubber based adhesives for tyres and tubes curing.
IS : 2796—1964	Motor gasoline 83, octane

Standards under Preparation

Shellac jointing or gasket compounds (wide circulation stage)
Motor benzole

Standards on the Programme of Formulation

Filter and filter elements lubricating oil

Car polish

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APPENDIX XVI—(*Contd.*)

List of Rationalised Wrought Steels (Bars, Billets & Forgings) For Automobile and Ancillary Industries

1. C15Mn75
2. C25Mn75
3. C30
4. C35Mn75
5. C45
6. C50
7. C55Mn75
8. 13S25
9. 14Mn1S14
10. 25Mn1S14
11. 40Mn2S12
12. 37Mn2
13. 35Mn2Mo28
14. 15Cr65
15. 17Mn1 Cr 95
16. 20MnCr1
17. 40Cr1
18. 40Cr1Mo28
19. 25Cr1MO55
20. T55Cr70V15
21. 35Ni1Cr60
22. 15Nicr1Mo12
23. 15Ni2Cr1Mo15
24. 40Ni2Cr1Mo28
25. 40Ni3Cr65Mo55
26. 16NiCr2Mo20
27. 20Ni2Mo25
28. 20Ni55Cr50Mo20

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APPENDIX XVII

(*Vide* paragraph 14.2)

Non-functional Components of Commercial Vehicles amenable to standardisation in terms of their overall dimensions to promote interchangeability in different Vehicles (*Compiled by the A.I.A.A.I.A.*)

1. Oil filler Cap.
2. Drain valve.
3. Thread nipple.
4. Spring for drain valve.
5. Fuel injection pump.
6. Fuel hose.
7. Nozzle and nozzle holder.
8. Fuel filter.
9. Fuel Filter element.
10. Air filter.
11. Air filter hose.
12. Oil filter.
13. Oil filter element.
14. Water inlet pipe.
15. Water outlet pipe.
16. Radiator.
17. Radiator cap.
18. Drain cock.
19. Rubber hose (straight length).
20. Hose clips.
21. Wheel Mounting pins & nuts (two or three sizes).
22. Storage Batteries (mountings & fixtures to be standardised).
23. Vacuum tank.
24. Front & rear wheels and rims.
25. Steering wheel.
26. Fuel tank.
27. Fuel tank cap.
28. Fuel tank gauge.
29. Head lamps (standardisation of fitments).
30. Side lamps (standardisation of fitments).

31. Electric Horns (standardisation of fitments).
32. Voltage regulator.
33. Dimmer switches.
34. Fuse box.
35. Fuses.
36. Electric Flashers.
37. Tail lamp.
38. Stop lamp.
39. Brake light switch.
40. Wiring terminals.
41. Battery wire.
42. Electric bulbs.
43. Speedometer.
44. Oil pressure gauge.
45. Temperature gauge.
46. Fuel gauge.
47. Amps meter.
48. Lamp holders.
49. Starter switches.
50. Various types of switches.
51. All types of grease nipples.
52. Electric bulbs.
53. Electric wipers.
54. Washer, spring washer and lock washer, star washer.
55. All types of bolts & nuts (conversion to mm size and thread standardisation).
56. Tools & tools-kit.

APPENDIX XVIII

(*Vide* Paragraph 19.3)

Statement showing selling prices of certain automobile ancillary items during 1965, 1966 *and* 1967

(In Rs.)

Sl. No.	Name of the Company	Specifications	Unit (each or set)	O.E. / R.P.	Selling prices as on 1-1-65	Selling prices as on 1-1-66	Selling prices as on 1-12-67
1	2	3	4	5	6	7	8
I.	**WHEELS**						
1.	*Whells India Ltd., Madras.*						
		Benz 6.5	Each	O.E.	112.00	117.40	151.46
			..	R.P.	200.00	225.00	235.00
		Benz 7.0	..	O.E.	120.00	122.60	158.32
			..	R.P.	215.00	225.00	250.00
		Dodge.	..	O.E.	112.00	113.90	143.50
			..	R.P.	200.00	210.00	220.00 (Fargo)
		Comet.	..	O.E.	128.00	130.70	162.75
			..	R.P.	225.00	245.00	255.00

	Beaver	O.E.	N.A.	N.A.	202.29
		R.P.	..	..	..
	Bedford	O.E.	99.00	100.20	115.00
		R.P.	180.00	195.00	200.00
	Shaktiman	O.E.	122.00	124.36	152.00
		R.P.	..	..	..
	Nissan	O.E.	116.00	115.66	139.65
		R.P.	..	..	..
	PWN-101	O.E.	..	..	..
		R.P.	..	..	210.00
2. *Sankey Wheels Ltd., Durgapur.*	4 J×15 L Ambassador Drg. No. W. 4677-2. ..	O.E.	25.25	27.64	29.99
		R.P.	..	37.45	30.43
	4.50E × 16 Jeep Drg. No. W-3644-8. ..	O.E.	26.35	28.15	29.13
		R.P.	..	31.75	31.72
	3.50 D × 14 Fiat Drg. No. 5562-D-Alt. 1. ..	O.E.	24.25	27.45	28.60
		R.P.	..	33.00	30.24
	3.50 D × 13 Standard Drg. W-4367-6. ..	O.E.	23.35	27.70	29.40
		R.P.	..	28.50	27.75
	B 7.0 × 20 HD T.M.B. Drg. No. 10-1. ..	O.E.	..	..	161.50
		R.P.	138.00	145.00	165.42
	B 6.5 × 20 HD T.M.B. Drg. No. 26. ..	O.E.	..	..	155.05
		R.P.	128.00	134.50	160.93

APPENDIX XVIII—(*Contd.*)

1	2	3	4	5	6	7	8
		B 6.5 × 20 MD Dodge Drg. No. W 5003-2.	..	O.E.	..	113.00	145.05
				R.P.	..	133.25	136.53
		B 6.0 × 20 HD Bedford Drg. W.-4187-10.	..	O.E.	..	111.50	111.50
				R.P.	..	119.25	127.02
		B 6.5 × 20 HD Bedford Drg. No. 11-1.	..	O.E.	..	..	156.50
				R.P.	..	..	161.72
DYNAMOS, STARTING MOTORS, HEAD LAMPS AND ALTERNATORS ETC.							
				Effective from			
					Feb.'65	*Sept.'65*	*Post devaluation prices*
1. *Lucas TVS Ltd., Madras. CAV starter for.*		Telco SP5 12B 25 . . .	..	O.E.	419.47	440.81	559.83
		Leyland Bs 524 P 190 . .	..	O.E.	411.76	431.70	543.26
		Simpson Bs 512P189 . .	..	O.E.	408.04	427.36	542.75
		Simpson CA45/12D/68 . .	..	O.E.	334.87	345.72	439.06
Lucas Starter for .		Standard M 35G . . .	..	O.E.	86.11	90.51	116.31
		Standard M45 PE . . .	..	O.E.	..	273.00	350.81
		Premier M 3 PE . . .	..	O.E.	129.84	136.96	178.05

Regulators for	Simpsons 3 GC	O.E.	27.03	27.82	33.38
	Bajaj 3 GC	O.E.	28.18	28.97	34.86
Lucas Dynamos for	Telco C40 LQ	O.E.	112.99	119.76	152.10
	Simpson C 40 LQ	O.E.	105.65	111.63	141.77
	Standard C40Q	O.E.	87.93	93.48	118.72
	Premier C 40 Q	O.E.	100.58	106.15	134.81
CAV Dynamo for	Telco GGS 512-1	O.E.	342.92	355.66	451.69
	Leyland GG-S5-24-3	O.E.	306.29	319.62	405.92
Distributor for	Standard 25 D4	O.E.	39.88	40.80	52.43
	Hindustan 25D4	O.E.	38.97	39.86	51.22
	Premier 23D4 with Pedestal	O.E.	45.90	47.08	60.50
Head Lamp for	Hindustan 26957003	O.E.	24.99	26.50	33.66
	Hindustan 26057002	O.E.	30.89	32.61	41.41
	Leyland 51477	O.E.	32.91	35.22	44.73
	Premier 26957005(w/o rim)	O.E.	26.73	28.35	36.00
	Premier 26957006 (with rim)	O.E.	..	34.38	43.66
	Bajaj 51336 J	O.E.	32.41	34.13	43.35
	Standard 51336 J	O.E.	32.41	34.13	43.35
	Standard 54052506	O.E.	26.23	27.85	35.37
Screen wiper for	Hindustan DR3	O.E.	58.01	59.62	76.61
	Standard DR 3A	O.E.	..	58.73	75.47

APPENDIX XVIII—(*Contd.*)

1	2	3	4	5	6	7	8
2.	*Globe Auto Electricals Ltd., Bombay.*				(1-4-65)	(1-9 65)	
		Q-165A Ignition Switch (PAL)	Each	O.E.	7.50	7.75	9.75
				R.P.	28.00	35.00	35.00
		BE 200-Beg. Coils . . .	..	O.E.	16.50	17.00	18.00
				R.P.	29.50	34.00	32.00
		Bz-200-A Ig. Coils . . .	..	O.E.	19.75	20.70	22.90
				R.P.	60.00	60.00	45.00
		BE-200-BH Ig. Coils . .	..	O.E.	..	12.50	13.75
				R.P.	32.00	36.00	32.00
		S-86B Distributor . . .	..	O.E.	36.50	37.00	43.60
				R.P.	140.00	175.00	175.00
		TGE-54G-Wiper Motor with bracket.	..	O.E.	56.35	57.65	61.90
				R.P.	..	..	..
		TGE-543 KD wiper Motor	..	O.E.	..	48.75	51.50
				R.P.	150.00	180.00	150.00
		TGE-543-WJ wiper Motor .	..	O.E.	..	43.75	46.50
				R.P.	..	180.00	150.00

TGE-544 Telco wiper Motor . ..	O.E.	..	37.80	43.75
	R.P.	150.00	180.00	150.00
TEG-543 S wiper Motor . ..	O.E.	..	55.00	63.50
	R.P.	..	180.00	150.00
ALE-5101 Alternator	O.E.	157.81	159.75	185.25
	R.P.	520.00*	520.00*	530.00*
ALK-5101 Alternator	O.E.	124.40	130.50	153.00
	R.P.	425.00	425.00	425.00
MDU-7013 St. Motor	O.E.	133.00	134.15	160.85
	R.P.	540.00	615.00	615.00
MDU-6018 St. Motor	O.E.	122.50	129.75	154.75
	R.P.	550.00	625.00	625.00
MCH-6215 St. Motor	O.E.	..	..	..
	R.P.	725.00	725.00	680.00
G. G. W. 7404-Generator . ..	O.E.	..	..	..
	R.P.	550.00	550.00	480.00
TGE-518/I-B DSW wiper Motor. ..	O.E.	..	..	..
	R.P.	150.00	180.00	180.00
TGE-54G DSW wiper Motor ..	O.E.	..	..	..
	R.P.	150.00	235.00	235.00

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*Includes cost of matching regulator.

APPENDIX XVIII—(*Contd.*)

1	2	3	4	5	6	7	8
III	RADIATORS						
	1. *India Radiators Ltd., Madras.*	Willy's Jeep 010220 . .	Each	O.E.	115.00	147.99	188.41
				R.P.	250.00	280.00	280.00
		Hindustan Ambassador H 300001.	,,	O.E.	..	200.00	193.00
				R.P.	235.00	260.00	285.00
		Tata Benz 3125002901 . .	,,	O.E.	364.37	455.00	450.00
				R.P.	550.00	625.00	630.00
		Leyland 295841B 559451 .	,,	O.E.	330.00	429.68	526.00
				R.P.	550.00	614.00	660.00
		Fiat PAB-11972 . . .	,,	O.E.	116.00	155.29	176.00
				R.P.	197.00	222.00	245.00
		Bajaj Tempo-4-181-108-201-0	,,	O.E.	..	..	185.10
				R.P.	..	..	250.00
		F.C. 150 Trucks 915541 . .	,,	O.E.	..	154.62	154.62
				R.P.	..	..	300.00
	2. *Teksons, (P) Ltd., Bombay.*	T.M. Benz-2901 (Tubular) Copper/Brass . . .	,,	O.E.	360.88	360.80	471.00
				R.P.	599.00	599.00	650.00
		Dodge- 13055 (Tubular) . . Copper/Brass . . .	,,	O.E.	237.60	..	..
				R.P.	360.00	360.00	380.00

3. *Bharat Radiators (P) Ltd., Bombay.*	Fiat	,,	O.E.	..	126.09	*175.00
	Dodge	,,	R.P.	..	218.54	265.92
	Dodge station wagon : 26268	,,	O.E.	..	251.78	315.83
	Dodge station wagon 4802		O.E.	..	308.96	366.02
	Power wagon PAB: 21413 .	,,	O.E.	..	243.33	287.23
	Tempo	,,	O.E.	..	90.80	115.94
	Jeep	,,	O.E.	..	*189.39	*189.39
IV PANEL INSTRUMENTS :						
International Instruments Private Ltd., Bangalore.						
(i) Speedometer for Herald Car	125 11 01/14 100 mm dia .	Per set	O.E.	25.05	27.41	30.06
			R.P.	65.40	65.40	75.45
Ambassador Car	125 11 01/11 100 mm dia .	..	O.E.	..	30.30	33.31
			R.P.	..	66.50	75.45
Bedford Truck .	125 11 01/04 100 mm dia. .	..	O.E.	..	28.64	32.11
			R.P.	..	66.85	75.45
Fiat Car . .	124 11 02/02 85 mm dia . .	..	O.E.	..	31.10	33.96
			R.P.	..	65.00	73.30

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*Components like upper tanks and lower tanks etc. of the radiators, were supplied by the *unit*.

APPENDIX XVIII—(*Contd.*)

1	2	3	4	5	6	7	8
	Power Wagon Truck/	125 11 01/04 100 mm dia.	..	O.E.	26.51	29.90	33.37
				R.P.	..	66.85	75.45
	Dodge Truck	125 11 01/09 100 mm dia.	..	O.E.	..	31.35	34.82
				R.P.	..	66.50	75.45
	Dodge Bus	125 11 01/13 100 mm dia.	..	O.E.	..	31.35	35.82
				R.P.	..	66.50	75.45
	D-300 Truck	125 11 01/09 100 mm dia.	..	O.E.	..	32.21	34.82
				R.P.	..	66.50	75.45
	T.M.B.	125 11 01/01 100 mm dia.	..	O.E.	25.39	27.06	30.07
				R.P	64.45	64.45	75.45
	Leyland Comet	125 11 01/08 100 mm dia.	..	O.E.	34.07	30.70	33.71
				R.P.	65.15	65.15	75.45
	3-Wheeler	125 11 01/05 100 mm dia.	..	O.E.	28.72	29.43	32.44
				R.P.	66.35	66.35	75.45
	Jeep	124 11 01/03 85 mm dia.	..	O.E.	29.55	30.21	32.72
				R.P.	73.30	73.30	73.30

(ii) *Fuel Gauges for*

Herald Car	301 52 01/07 52 mm dia	O.E.	21.50	23.59	27.93
		R.P.	55.20	55.20	64.40
Ambassador Car	301 52 01/05 52 mm dia	O.E.	..	29.80	34.86
		R.P.	..	55.20	64.40
Bedford Truck	301 52 01/01 52 mm dia	O.E.	23.00	26.56	32.46
		R.P.	55.20	55.20	64.40
Fiat Car	301 02 01/02 52 mm dia	O.E.	..	29.50	33.80
		R.P.	..	55.20	64.40
Power Wagon Truck.	301 02 02/01 52 mm dia	O.E.	20.35	27.75	32.81
		R.P.	..	55.20	64.40
Dodge Truck	301 02 02/04 52 mm dia	O.E.	..	29.10	34.16
		R.P.	..	55.20	64.40
D-300 Truck	301 02 02/04 52 mm dia	O.E	..	29.94	34.16
		R.P.	..	55.20	64.40
Dodge Bus	301 02 02/06 52 mm dia	O.E.	23.10	29.10	34.16
		R.P.	..	55.20	64.40
T.M.B.	301 02 02/02 52 mm dia	O.E.	23.50	29.74	34.80
	301 02 02/03	R.P.	..	55.20	64.40
Jeep	301 02 01/01 52 mm dia	O.E.	23.45	28.64	33.70
		R.P.	55.20	55.20	64.40

APPENDIX XVIII—(*Contd.*)

1	2	3	4	5	6	7	8
	(iii) *Tank units for*						
	Herald Car . .	220 01 01/01	..	O.E.	12.50	13.73	13.83
				R.P.	31.70	31.70	36.80
	Ambassador car .	220 01 01/11	..	O.E.	..	13.70	13.80
				R.P.	..	31.70	36.80
	Bedford Truck .	220 01 01/02	..	O.E.	..	12.19	12.29
				R.P.	..	31.70	36.80
	Fiat Car . .	220 01 01/03	..	O.E.	..	13.50	13.58
				R.P.	..	31.70	36.80
	Power Wagon Truck	220 01 01/04 and 05 . .	..	O.E.	13.75	12.80	12.90
				R.P.	..	31.70	36.80
	Dodge Truck .	220 01 01/09	..	O.E.	..	13.45	13.53
				R.P.	..	31.70	36.80
	D-300 Truck . .	220 01 01/04	..	O.E.	..	13.87	13.90
				R.P.	..	31.70	36.80
	Dodge Bus . .	220 01 01/09. . . .	..	O.E.	..	13.45	13.53
				R.P.	..	31.70	36.80

T.M.B.	220 01 02/01	..	O.E.	13.50	14.11	14.21
			R.P.	..	31.70	36.80
Jeep	220 01 01/06	..	O.E.	12.57	13.11	13.21
			R.P.	31.70	31.70	36.80
(iv) *Temperature Gauges for*						
Bedford Truck	181 01 02/01 52 mm dia	..	O.E.	22.50	25.56	30.21
			R.P.	55.45	55.45	74.55
Fiat Car	181 01 04/01 52 mm dia	..	O.E.	..	28.51	31.62
			R.P.	..	55.45	74.55
Power Wagon Truck.	181 01 02/02 52 mm dia	..	O.E.	20.01	25.50	30.15
			R.P.	..	55.45	70.40
Dodge Truck	181 01 01/03 52 mm dia	..	O.E.	..	32.29	34.51
			R.P.	..	55.75	74.90
D-300 Truck	181 01 02/03 52 mm dia	..	O.E.	..	28.84	34.15
			R.P.	..	55.75	74.90
Dodge Bus	181 01 02/04 52 mm dia	..	O.E.	..	32.29	34.51
			R.P.	..	55.75	74.90
T.M.B. (2340mm).	182 01 01/01 60 mm dia	..	O.E.	24.12	27.61	32.29
			R.P.	58.60	58.60	79.00
Jeep (661 mm)	181 01 01/02 52 mm dia	..	O.E.	23.85	24.94	28.09
			R.P.	55.25	55.25	70.95

APPENDIX XVIII—(*Contd.*)

1	2	3	4	5	6	7	8
	(v) *Air Pressure Gauges for*						
	Dodge Truck .	151 02 02/05 52 mm dia . .	..	O.E.	..	18.40	21.59
				R.P.	..	45.00	50.40
	Dodge Bus . .	151 02 02/07 52 mm dia . .	..	O.E.	..	18.40	21.59
				R.P.	..	45.00	50.40
	Leyland Comet	151 02 02/03 52 mm dia . .	..	O.E.	..	21.70	23.99
				R.P.	..	45.00	50.40
	(vi) *Single Pressure Gauges for*						
	Ambassador Car .	151 02 02/06 52 mm dia . .	..	O.E.	..	17.80	20.09
				R.P.	..	40.55	50.40
	Power Wagaon Truck	151 02 01/02 52 mm dia . .	..	O.E.	15.83	16.75	19.04
				R.P.	..	40.55	50.40
	D-300 Truck .	151 02 02/04 52 mm dia . .	..	O.E.	..	18.06	20.00
				R.P.	..	40.55	50.40
	T.M.B. .. .	152 01 01/01 60 mm dia . .	..	O.E.	16.11	16.43	18.72
				R.P.	42.10	42.10	50.40

Leyland Comet	151 02 01/01 52 mm dia	..	O.E.	18.82	18.06	20.35
			R.P.	40.55	40.55	50.40
Jeep	151 01 01/01 52 mm dia	..	O.E.	..	..	..
			R.P.	..	..	..
(vii) *Double Pressure Gauges for*						
T.M.B.	152 30 01/02 60 mm dia	..	O.E.	30.03	31.29	39.74
			R.P.	80.20	80.20	90.10
(viii) *Vaccum Gauges for*						
Dodge Truck	151 20 01/02 52 mm dia	..	O.E.	..	..	22.62
			R.P.	..	48.05	54.45
Dodge Bus	151 20 01/03 52 mm dia	..	O.E.	..	..	22.62
			R.P.	..	48.05	54.45
Leyland Comet	151 20 01/01 52 mm dia	..	O.E.	22.08	22.08	..
			R.P.	48.05	48.05	54.45
(ix) *Ampere Meters for*						
Ambassador Car	191 01 02/03 52 mm dia	..	O.E.	..	13.55	14.61
			R.P.	..	17.50	17.50
Power Wagon Truck	191 01 02/02 52 mm dia	..	O.E.	9.92	12.55	13.61
			R.P.	..	17.50	17.50

APPENDIX XVIII—(*Contd.*)

1	2	3	4	5	6	7	8
	Dodge Truck	191 01 02/03 52 mm dia	..	O.E.	..	13.15	14.21
				R.P.	..	17.50	17.50
	D-300 Truck	191 01 02/03 52 mm dia	..	O.E.	..	13.55	14.21
				R.P.	..	17.50	17.50
	Dodge Bus	191 01 02/04 52 mm dia	..	O.E.	..	13.15	14.21
				R.P.	..	17.50	17.50
	Leyland Comet	191 01 02/01 52 mm dia	..	O.E.	8.05	13.70	14.75
				R.P.	17.50	17.50	17.50
	(x) *Warning Lamp Cluster for*				..		
	Herald Car	111 052 02/W/L Cluster	..	O.E. R.P.	8.70 19.10	9.45 19.10	11.37 25.90
	Ambassador Car	111 052 03 W/L Cluster	..	O.E.	..	11.65	12.76
				R.P.	..	25.90	25.90
	Bedford Truck	100 000 002/7 W/L Holder	..	O.E.	8·18	9·60	10·71
		100 000 002/4 Do.		R.P.	20·05	20·05	24·30
		100 000 002/7 Do.	..	..	..	..	..
	Fiat Car	100 000 002/7 Do.	..	O.E.	..	12·32	13·60
		100 000 002/6 Do.		R.P.	..	21·80	32·40

	100 000 003/4	Do.	..	..	..	..	..
	100 000 003/3	Do.	..	..	..	..	..
Power Wagon Truck	100 000 003/1	Do.	..	O.E.	3·84	3·00	3·37
				R.P.	..	5·45	8·10
D-300 Truck	100 000 003/1	Do.	..	O.E.	..	7·10	7·76
				R.P.	..	10.90	16.20
(xi) *Speedometer Cables for*							
Herald Car	203 32 106/01	1300 mm	..	O.E.	4·75	5·30	6·13
			..	R P.	12·55	12·55	13·25
Ambassador Car	203 32 106/02	1423 mm	..	O.E.	..	7·85	8.75
			..	R.P.	..	13·35	14·35
Bedford Truck	203 32 104/01	1625 mm	..	O.E.	7·25	8·25	9·31
				R.P.	13·50	13·50	16·25
Fiat Car	203 32 101/02	1450 mm	..	O.E.	..	5·97	6·74
				R.P.	..	12·80	13·90
Power Wagons Truck	203 32 104/02	2440 mm	..	O.E.	..	9·70	11·27
				R.P.	..	19·15	22·60
Dodge Truck	203 32 104/03	1840 mm	..	O.E.	..	7·75	8·82
				R.P.	..	13·05	16·15
D-300 Truck	203 32 104/03	1524 mm	..	O.E.	..	8·40	9·22
				R.P.	..	10·35	16·85

APPENDIX XVIII—(*Contd.*)

1	2	3	4	5	6	7	8
	Dodge Bus	203 32 104/03 2835 mm	..	O.E.	..	10·05	11·81
				R.P.	..	17·00	21·25
	T.M.B.	203 32 102/06 3740 mm	..	O.E.	12·15	12·35	14·75
				R.P.	23·25	23·25	31·35
	Leyland Comet	203 32 109/01 2670 mm	..	O.E.	9·50	11·00	12·70
				R.P.	..	23·65	27·65
	3-Wheeler	203 32 102/05 625 mm	..	O.E.	6·25	6·43	6·85
				R.P.	12·50	12·50	16·10
	Jeep	203 32 704/01 1520 mm	..	O.E.	5·75	6·50	7·46
				R.P.	12·25	12·25	14·50
V.	CLUTCH ASSEMBLY	6¼″ Standard Herald	set	O.E.	46·00	48·38	51·58
	1. *Automobile products of India Ltd. Madras*	7¼″ Bajaj 4-Wheeler Viking* with woven facing** with moulded facing.	set	O.E.	..	..	116·70* 110·50**
		7¼″ Fiat	set	O.E.	55.86	58·74	64.20
		8″ Hindustan Ambassador	set	O.E.	55·00	58·84	64·56

1. *Automobile products of India (contd.)*	9″ Standard 1-ton . . .	set	O.E.	..	110·00	120·60
	10″ Massey Ferguson Tractor	set	O.E.	94·04	97·00	116·66
	10″ International Tractor .	set	O.E.	.. ..	..	116·66
	11″ TELCO £ with jurid facing ££ with WT-1 facing	set	O.E.	150·00	154·85	182·81£ 192·67££
	11″ Shaktiman . . .	set	O.E.	..	209·85	245·58
	11″ Nissan	set	O.E.	..	..	205·48
	13″ Leyland Comet (Driven Plate only)	No.	O.E.	71·47	75·10	78·85
	12″ Dodge	set	O.E.	..	..	203·50
	14- Bedford	set	O.E.	..	..	207·83
2. *Turner Hoare & Co. Ltd., Bombay*	Pressure Plate . . .	set	O.E.	85·00	95·00	95·00
	Driven Plate	set	R.P.	110·00	110·00	95·00 (As on 31-10-67)

APPENDIX XVIII—(*Contd.*)

1	2	3	4	5	6	7	8
VI. BRAKE ASSEMBLY							
	1. *Brakes India Ltd., Madras.*	Willys Jeep brakes . . .	..	O.E.	294·50	294·50	337·88
		Hindustan Ambassador brakes	..	O.E.	..	215·00	240·00
		Standard Herald brakes . .	..	O.E.	..	230·00	285·81
		Std. 20 brakes (1-ton) . .	..	O.E.	..	450·00	575·80
		Dodge (5-ton)	..	O.E.	..	1,195·00	1,446·00
		Leyland Comet (cambrakes-7 ton)	..	O.E.	..	1670·20	1804·26
		Leyland Hydraulic brakes .	..	O.E.	185·00	..	..
		Hippo/Beaver Hydraulics only	..	O.E.	..	96·00	117·68
		Tandem Master Cylinder (Bedford)	..	O.E.	120·00	120·00	129·54
	2. *Automobile Products of India Ltd., Madras.*	Hindustan	Set	O.E.	174·06	174·06	202·07
		Master cylinder to Hindustan	No.	O.E.	..	23·00	23·10
		Bajaj 3 wheeler . . .	Set	O.E.	..	198·12	226·88
		Bajaj 4-wheeler . . .	,,	O.E.	..	..	293·76
		T.M.B. 312	,,	O.E.	..	..	254·42
		T.M.B. 1210	,,	O.E.	..	264·25	285·95

	Fiat	..	O.E.	..	..	195·15
	Shaktiman	..	O.E.	..	..	381·29
PROPELLER SHAFTS						
Ex-Cell-0 India Ltd., *Bombay.*	Hind, Ambassador 47-0275	Each	O.E.	90.00	105.00	122.00
			R.P.	134.00	146.00	208.00
	Bedford J4L-FR XP-1001	,,	O.E.	156.00	193.00	234.00
			R.P.	223.00	247.00	360.00
	Bedford J4L-RR 54-0329	,,	O.E.	249.00	289.00	348.00
			R.P.	374.00	411.00	590.00
	Bedford J4S-XFR-XP-1009	,,	O.E.	156.00	187.00	222.00
			R.P.	215.00	234.00	328.00
	Bedford J4S-RR-XP-1007	,,	O.E.	249.00	287.00	343.00
			R.P.	369.00	404.00	575.00
	Bedford J4E-RR 49-0945	,,	O.E.	278.00	331.00	408.00
			R.P.	431.00	479.00	685.00
	Ley. 210" W.B. FR XP-1017	,,	O.E.	235.00	277.00	345.00
			R.P.	..	..	620.00
	Ley. 210" W.B. RR XP-1018	,,	O.E.	263.00	310.00	383.00
			R.P.	..	..	687.00
	Ley. 176" & 163'' W.B. RR 52-0056	,,	O.E.	253.50	294.00	352.00
			R.P.	388.00	487.00	605.00

APPENDIX XVIII—(*Contd.*)

1	2	3	4	5	6	7	8
		Ley. 176″ W. B. FR. 53-0792	,,	O.E.	178.00	206.00	242.00
				R. P.	270.00	296.00	425.00
		Ley. 163″ W.B. FR 53-0689	,,	O.E.	171.00	197.00	233.00
				R.P.	260.00	284.00	410.00
	Ex- Cell-0 (*Contd.*)	Ley. 118″ W. B. 53-1427	Each	O.E.	226.50	265.00	321.00
				R. P.	378.00	415.00	595.00
		Jeep-Front XP-1005	,,	O. E.	78.15	88.00	102.00
				R. P.	117.00	126.00	184.00
		Jeep-Rear 202391-1	,,	O.E.	96.36	107.00	122.00
				R. P.	148.00	157.00	207.00
		FC-150 Front XP-1019	,,	O.E.	84.50	93.00	107.00
				R. P.	..	130.00	182.00
		FC-150 Rear XP-1020	,,	O.E.	97.25	104.00	115.00
				R.P.	..	145.00	190.00
		Standard 20 XP-1024	,,	O.E.	..	138.00	155.00
				R. P.	..	..	245.00
		Standard Herald 60-1026	,,	O.E.	100.00	112.00	130.00
				R. P.	131.00	140.00	180.00
		Fiat 1100 XP-1016	,,	O. E.	50.00	55.00	..
				R. P.	..	120.00	154.00

	Ley. 203″ W. B. FR 53-0561 .	,,	O.E.	209.00	258.00	322.00
			R.P.	331.00	372.00	580.00
	Ley. 203″ W.B. RR 53-1315 .	,,	O.E.	251.50	305.00	381.00
			R. P.	368.00	481.00	683.00
VIII. OIL LUBRICATING ROTOR PUMP						
Carburettors Ltd., Madras	Herald 72 MZA MPS 3001 .	Each	O.E.	..	15.00	20.00
			R.P.	..	35.00	45.00
Fuel Pump for	Std. 20 72 MZD MPS 3003 .	,,	O.E.	..	15.50	..
			R.P.	..	35.00	..
	Std. 20 72 MZD MP S 3000	Each	O.E.	..	..	..
			R. P.	..	35.00	..
	,, ,, ,, ,, ,, 3008	,,	O.E.	..	..	20.50
			R. P.	..	..	45.00
	Fiat 72 MZB 3004	,,	O.E.	..	14.50	19.00
			R. P.	..	35.00	45.00
	Hindustan 72 MZE 3005	,,	O.E.	..	15.00	..
			R. P.	..	35.00	..
	,, ,, 3007	,,	O.E.	..	..	..
			R. P.	..	35.00	45.00
	,, ,, 3010	,,	O.E.	..	..	19.00
			R. P.	..	..	45.00

APPENDIX XVIII—(*Contd.*)

1	2	3	4	5	6	7	8
IX.	AUTOMOBILE SAFETY GLASS						
	Hindustan Safety Glass works Pvt. Ltd., Calcutta.				(Prices are available only for the current year)		
	Wind Screen for .	Ambassador-sheet quality .	Each piece	O.E.	..	..	75.00
		Bedford sheet quality . .	,,	O.E.	..	..	130.00
		Fiat "D" Model Sheet quality	,,	O.E.	..	..	65.00
		D-16879 Dodge Plate quality .	,,	O.E.	..	..	20.90
		Standard Herald . . .	,,	O.E.	..	..	111.04
		Standard 20 Truck . . .	,,	O.E.	..	..	28.53
		T.M.B.(Flat)-Sheet quality .	,,	O.E.	..	..	22.87
		T.M.B. (Flat)-Plate quality .	Each piece	O.E.	..	..	53.66
		F C 150 Truck Sheet Quality .	,,	O.E.	..	..	210.00
		,, Plate Quality . .	,,	O.E.	..	..	260.00
	Back Lights for .	Abassador-sheet Quality . .	,,	O.E.	..	..	42.60
		Fiat "D" model-do- . .	,,	O.E.	..	..	82.00
		Standard Herald . . .	,,	O.E.	..	..	60.00

	Ambassador-Sheet Quality	Set. (one set of 8 pcs.)	O.E.	..	..	67.10
	Fiat "D" Model Sheet quality	Eachpce	O.E.	..	..	10.10
	Standard Herald	,,	O.E.	..	..	16.80
Rear Door	Ambassador-Sheet quality	Set (one set of 8 pcs.)	O.E.	..	..	67.10
	Fiat "D" Model -do-	Each pce.	O.E.	..	..	15.05
Vent Wing	Ambassador-sheet quality	Set (one set of 8 pcs.)	O.E.	..	..	67.10
	Fiat 'D' Model —do—	Each pce.	O.E.	..	..	4.50
Vent	Standard Herald-Plate quality	,,	O.E.	..	..	4.53
Rear fixed vent	Ambassador-Sheet quality	Set. (One set of 8 pcs.)	O.E.	..	..	67.10
Quarter light	Standard Herald	Each pce.	O.E.	..	..	10.70

APPENDIX XVIII—(*Contd.*)

1	2	3	4	5	6	7	8
X.	SERVO EQUIPMENT AIR BRAKES AND COMPRESSORS						
	Sundaram Clayton Ltd., Madras.						
	Full Air Brake Equipment set for	Leyland Comet Truck	Set	O.E.	1450.00	1450.00	1760.00
		Leyland Comet Tractor	,,	O.E.	1672.00	1672.00	2128.00
		Leyland Beaver Truck	,,	O.E.	2170.75	2170.75	2831.00
		Leyland Beaver Tractor	,,	O.E.	2399.75	2399.75	3208.50
		Leyland Hippo Truck	,,	O.E.	2620.75	2620.75	3412.72
		Leyland Hippo Tractor	,,	O.E.	2849.75	2849.75	3790.22
		Leyland Tiger Chassis	,,	O.E.	2170.75	2170.75	2831.00
	Compressor set for	Simpsons P6 Engine	,,	O.E.	300.00	300.00	337.87
		Simpsons P6/354 Engine	,,	O.E.	..	..	337.87
		Hindustan Bedford J6	,,	O.E.	..	..	357.45
	Servo set for	Premier Dodge Truck ML4	,,	O.E.	450.00	450.00	520.62
		Premier Dodge Truck ML21	Set	O.E.	..	..	611.48
		Hindustan Bedford J4 truck	,,	O.E.	450.00	450.00	530.50
		Hindustan Bedford Bus Chassis	,,	O.E.	450.00	450.00	530.50

Servo, Tyre Inflator and Conlordu valve for	Benz L312 and L342 Model Trucks	,,	O.E	404.00	404.00	457.00
XI. FUEL INJECTION EQUIPMENT						
Motor Industries Co. Ltd., Bangalore.						
Nozzle Holder fitted with Nozzle :						
For						
Simpsons-P6 Perkins	H-KB 35SA 537/4/DL 110S 916	,,	O.E.	34.00	28.65	29.85
			R.P.	67.50	67.50	63.00
Simpsons-P6-354 .	H-KBL 67S 75/4/DLLA 150/S 239	,,	O.E.	41.00	34.34	34.34
			R. P.	89.00	89.00	83.50
Telco-TMB-OM-312	H-KCA 30 SD 2/4/DN OSD 211	,,	O.E.	28.00	19.42	20.30
			R. P.	58.20	58.20	54.70
Ashok Leyland AL. O.350.	H-KBAL 83S 3/4/DLL 140 S 215	,,	O.E.	56.00	42.80	Supply discontinued.
			R. P.	95.00	95.00	89.50
Premier Automobiles Meadows.	H-KBL 97S 76/13 DLL 150S 241	,,	O.E.	51.30	51.30	Supply discontinued.
			R.P.	85.00	85.00	79.50

APPENDIX XVIII—(*Contd.*)

1	2	3	4	5	6	7	8
	Shaktiman Defence	H-KDL 80S 8 DLLA 23 S 155	Set	O.E.	58.00	44.20	47.03
				R.P.	95.00	95.00	89.00
	Filters for :						
	Simpsons-Perkins P6	H-FJ/DF 11W 11 A43 . .	Each	O.E.	47.30	47.30	52.50
				R.P.	110.00	110.00	110.00
	Simpsons-Perkins P6/354	H-FJ/DF 5W 5/46 . . .	,,	O.E.	51.00	40.00	44.83
				R.P.	100.00	100.00	100.00
	Telco-TMB-OM 312	H-FJ/DF 11W 11A 118 . .	,,	O.E.	63.75	50.00	52.50
				R.P.	110.00	110.00	110.00
	Premier Automobiles Meadows	H-FJ/DF 11W 11A 118 .	,,	O.E.	68.20	55.27	Supplies discontinued.
				R.P.	110.00	110.00	110.00
	Leyland-AL-350 (Dual)	H-FJ/DF 11W 11A 3 . .	,,	O.E.	66.50	50.00	Supplies discontinued
				R. P.	110.00	110.00	110.00

Leyland-AL-350 (Single)	H-FJ/DW 11AH	,,	O.E.	35.00	30.00	Supplies discontinued.
			R.P.	65.00	65.00	65.00
Shaktiman (Defence).	H--FJ/DF 11W 11A 117	,,	O.E.	79.00	50.00	52.50
			R. P.	110.00	110.00	110.00
Multi Cylinder Pumps for						
Simpsons-Perkins P6	H-PE 6A 608 310RS 1032 EP/M2	,,	O.E.	520.00	452.40	461.29
	80AA 90 FP/KE22 AD 254/2 couplings.	,,	R.P.	862.75	853.75	843.75
Simpsons-P6/354	H-EP/VA 6/100 H1400L1	,,	O.E.	506.00	444.00	572.40
			R. P.	1525.00	1525.00	1525.00
Telco-TMB OM 312	H-PES 6A 70B 310 RS 64/7	,,	O.E.	581.00	546.88	596.40
	RQ 250-1450A 19d FP/KE 22AD 254/2	,,	R.P.	984.00	979·00	979.00
Ashok Leyland-AL-350	H-PE 6A 80B 320 RS 465/11	,,	O.E.	516.00	457.50	Supplies discontinued.
	EP/MV 80AA 116 FP/KE 22AD 223/2	,,	R. P.	846.00	846.00	846.00

APPENDIX XVIII—(*Contd.*)

1	2	3	4	5	6	7	8
	Premier Automobiles Meadows	H-PES 4A 80B 310L5 2130 .	Each	O.E.	629.00	622.98	Supplies discontinued.
		EP/Rsv 200-1250 A 1B 404 FP/KE 22AD 223/2 .	,,	R. P.	1097.00	1093.00	1093.00
	Shaktiman-Defence	H-PE 6AM 7C 4/2 RS 1001 .	,,	O.E.	1192.50	1174.30	1313.40
		RQ 250-1275 AA 344d . .	,,	R..P.	2500.00	2500.00	2495.00
		EP/SA 550-1000 A3 CR35 FP/KLA 22K7 .					
XII	SEMI-FINISHED CASTINGS & FORGINGS						
	Ennore Foundries Ltd., Madras.						
	Non-Ferrous Castings	DFF 2 542536 Inlet Manifold.	,,	..	50.10	52.70	52.70
		DEF 3 28672H Rear Cover } . .	,,	..	36.76	40.34	40.34
		DEF 4 535400 Timing case .	,,	..	35.95	40.10	40.10
		DFF 10 272520 Valve Cover .	,,	..	34.59	36.32	36.32
		DEF 17 Ali 165 Cylinder Head Cover	,,	..	38.59	46.31	46.31
		DEF 25 ALI 1912 Valve Cover	,,	..	..	27.23	27.23

	DEF 30 AL2334 Inlet Manifold DEF 83 EPGE 30 P 10 K	,,	..	..	67.53	67.53
	Pump Housing . . .	,,	..	35.50	35.50	43.50
	DER 54 M230000 Servo Body Cylinder.	,,	..	46.00	46.00	46.00
	DEF 57 M 230300 Servo Cylinder.	,,	..	..	46.25	46.25
Ferrous Castings	EF 23 523 K 19 Clutch Housing	,,	..	47.58	47.58	51.15
	EF 24 28918 Fly-wheel Housing	,,	..	95.17	95.17	102.31
	EF 27 233615 Clutch Back plate	,,	..	22.41	22.41	24.09
	EF 28 522K 18 Gearbox .	,,	..	86.87	86.87	93.39
	EF 35 506453 Fly wheel . .	,,	..	75.80	75.80	81.49
	EF 36 ALI 151 350 Cylinder head.	,,	..	221.46	221.46	249.14
	EF 37 ALI 660 350 Cylinder Block.	,,	..	457.88	457.88	515.12
	EF 39506458 Clutch Facing .	,,	..	18.59	19.66	19.98
	EF 58 A1 2836 Brake Drum Front	,,	..	..	81.75	81.75
	EF 59 599199 Brake Drum Rear	,,	..	..	96.75	96.75
	EF 60 604371 370 Cylinder Block.	,,	..	518.20	518.20	582.98
	EF 61 602017 370 Cylinder head.	,,	..	259.10	259.10	291.49

APPENDIX XVIII—(*Contd.*)

1	2	3	4	5	6	7	8
	Ennore Foundries Ltd., Madras—(Contd.)	EF 197 64674295 Tandom Master Cylinder.	Each	..	21.00	21.00	22.96
		EF199 64674496 Slave Master Cylinder.	,,	..	1.50	1.50	2.12
		EF 200 64674494 Willy's Master Cylinder	,,	..	6.10	6.10	8.30
		EF 203 64674202 Mercedes Master Cylinder.	,,	..	..	11.25	12.50
		EF 243 29670077 Nissan Master Cylinder.	,,	..	..	15.90	16.50
		EF 251 64674202 Mercedes Master Cylinder.	,,	..	..	15.05	15.05
		EF 225 11042/58000 Cylinder Head-Nissan painted.	,,	..	96.80	96.80	96.80
		EF 226 11011/58000 Cylinder Block Nissan painted.	,,	..	293.45	293.45	293.45
		EF 166 37114260 P6 Cylinder Block.	,,	..	364.00	364.00	442.50
		EF 167 37114260 P6 Cylinder Head.	,,	..	170.00	170.00	170.00
		EF 178 029028 P3 Cylinder head.	,,	..	82.00	82.00	106.00
		EF 179 0290008 P4 Cylinder head.	,,	..	99.00	99.00	140.25

EF 249 37116662 P6/354 Cylinder Head.	,,	..	..	..	268.00
EF 254 37111190 P3 Cylinder Block.	,,	..	..	..	259.00
EF 259 C 37114480 P6/354 Cylinder Block.	,,	..	..	..	614.00
EF 122 201246 Brake Drum Rear.	,,	..	6.54	6.54	8.78
EF 123 203077 Brake Drum Front.	,,	..	8.08	8.08	9.74
EF 165 302059 Herald Cylinder Block.	,,	..	112.53	155.25	185.00
EF 170 303038 Herald Cylinder Head.	,,	..	45.54	58.28	79.35
EF 180 304983 Rear Axle Housing.	,,	..	15.39	15.39	27.86
EF 204 210873 Brake Drum	,,	..	..	9.15	10.62
EF 205 301487A Vanguard Cylinder Block.	,,	..	220.00	220.00	261.00
EF 206 301995 Vanguard Cylinder Head.	,,	..	101.00	101.00	122.00
EF 220 209136 Brake Drum Front.	,,	..	19.50	19.50	24.72
EF 221 209166 Brake Drum Rear.	,,	..	18.50	18.50	24.21
EF 132 M130630 Crank Case	,,	..	..	31.75	40.22

NOTE : They sell only to automobile manufacturers or automobile ancillary manufacturers and they have a single price only for their castings which are either used as original equipment or as a spare part.

APPENDIX XVIII—*(Contd.)*

1	2	3	4	5	6	7	8
2	*The Aluminium Mfg. Co. Pvt. Ltd., Calcutta.*		(Prices for earlier years are not available)				
		Gear Box Extension 305047	Each	..	..	..	36.35
		Gear Box Clutch Housing 301949.	,,	..	..	..	93.35
		Cylinder Head (Fiat) (New) F 4060057.	,,	..	..	..	78.27
		Cylinder Head (Fiat) (Old) F 984744.	,,	..	..	..	78.27
		Intake Manifold F 4047203	,,	..	..	..	20.51
		Sump Lower H 107660 (Rev. 4)	,,	..	..	..	85.35
		Gear Case H 117144(Rev.B)	,,	..	..	..	161.00
		Housing Fly Wheel H 117156 (Rev. 2)	,,	..	..	..	150.00
		Multi Cylinder Pump Housing IP6K30SIK	,,	..	..	..	34.72
		Pump Housing casting IP6K 27 SIK.	,,	..	..	..	34.72
		Cover T.C. Front 0240002	,,	..	..	..	13.58
		Cover cylinder Head 0240009	,,	..	..	..	19.82
		Cover T. C. Front (Bedford) 0240309.	,,	..	..	..	17.02

Cover T. C. Front P3 0240551	,,	..	..	..	25.27
Cover Cylinder Head P3 0240188.	,	..	..	..	12.30
Cover Cylinder Head P4 0240017.	,,	..	..	..	18.19
Housing Fuel pump Drive 0440159.	,,	..	..	..	21.52
Timing Case with Boss 0440463.	,,	..	..	..	23.60
Timing Case without Boss 0440465.	,,	..	..	..	23.29
Induction Manifold 0540008 .	,,	..	..	..	31.53
Induction manifold P4 0540009	,,	..	..	..	23.36
Sump Lub. oil 0830047 . .	,,	..	..	..	70.89
Sump weel 0830024 . .	,,	..	..	..	28.01
Cradle fuel pump 0100002 .	,,	..	..	..	11.18
Sump Lub. oil P4 37175133/54	,,	..	..	..	78.55
Timing Case 37161172 . .	,,	..	..	..	24.44

APPENDIX XIX

(*Vide* Paragraph 20.2)

Statement showing imports of certain ancillary items during the period 1963-64 *to* 1967-68 (*April-November*,1967)

(Value Rs. in Lakhs)

Sl. No.	Name of ancillary item	Unit	1963-64		1964-65		1965-66		1966-67		1967-68 (Apr-Nov. 1967)	
			Qty.	Value	Qty.	Value	Qty.	Value	Qty.	Value	Qty	Value
1	2	3	4	5	6	7	8	9	10	11	12	13
1	Piston Assemblies of Petrol Engines for Motor Vehicles.	Kg.	..	..	..	..	19537	3.54	14520	4.14	22982	7.97
2	Piston Assemblies of Diesel Engines for Motor Vehicles	Kg.	..	..	..	..	26087	7.47	19636	5.20	13215	4.37
3	Pistons of Petrol Engines for Motor Vehicles .	Kg.	..	..	..	..	23879	4.69	24523	5.25	18052	4.14
4	Pistons of Diesel Engines for Motor Vehicles .	Kg.	..	..	..	..	14802	4.18	27910	8.64	41678	14.95
5	Piston Rings of Petrol Engines for Motor Vehicles	Kg.	..	..	..	..	26796	4.12	7055	2.27	62816	9.18
6	Piston Rings of Diesel Engines for Motor Vehicles	Kg.	..	..	..	..	58587	7.62	15107	4.53	32750	8.12

7	Fuel Injection Equipment except Injection Pumps of Diesel Engines for Motor Vehicles—Other Parts	Kg.	..	..	..	..	55811	19.61	43388	16.93	42333	19.30
8	Fuel Nozzle of Diesel Engines for Motor Vehicles	Kg.	..	..	..	..	504	0.23	2712	2.49	8430	4.65
9	Sparking plugs (14 m.m. and 18 m.m.) . .	No.	78	0.02	115	0.02	1112	0.06	238632	5.05	367429	1.61
10	Sparking plugs (Other Sices) . . .	No.	6376	0.91	2072	0.22	..	..	..	..	..	..
11	Head Lamps Complete .	No.	59797	3 38	8266	0.69	12998	0.76	5335	1.25	795	0.11
12	Horns	No.	13450	1.53	1548	0.27	3709	0.43	17547	1.46	1752	0.64
13	Ignition Coil . . .	No.	20552	1.24	18767	0.87	10157	0.54	17602	1.03	2323	1.30
14	Starter or Starting Equipment	No.	..	10.92	..	4.81	1475	12.24	3797	37.95	95	0.81
15	Windscreen Wiper Defrosters etc.	No.	..	..	..	..	5655	0.43	7568	2.13	3550	0.49
16	Secondary Battery for Motor Vehicles . .	No.	152	0.36	151	0.51	..	..	..	..	..	..
17	Brake Fluid	Lit.	16531	0.87	31387	1.02	3452	0.08	1265	0.09	1797	0.21
18	Spring Leaf for Motor Vehicles . . .	Kg.	167362	3.35	33381	1.75	2041	0.33	3429	0.60	3092	0.59
19	Speedometers . . .	No.	1106	0.41	654	0.64	5944	0.60	4780	1.43	630	0.38
20	Voltmeters . . .	No.	1422	5.44	2138	4.86	934	4.21	8029	6.15	1478	3.01
21	Ammeters	No.	3247	2.97	16403	2.69	3064	2.94	9895	2.52	515	1.46
22	Parts of Diesel Engines for Motor Vehicles N. E. S. Component Parts .	Kg.	2170809	230.34	2787980	345.20	2845749	362.57	1594947	281.95	552930	156.78
23	Pneumatic Motor Car and Truck Tubes . .	No.	10712	1.69	1474	0.37	- ..	..	5	0.0051	129	0.07

APPENDIX XX

(*Vide* Paragraph 21.1.2)

Statement showing the exports of automobile spare parts during last seven years.

(Value in Lakh Rupees)

Countries	1961	1962	1963	1964-65	1965-66	1966-67 pre Deva-luation	1966-67 Post Deva-luation	1967-68 (April—Feb.)
1	2	3	4	5	6	7	8	9
Aden . . .	0·06	0·23	3·53	2·27	1·81	0·65	0·94	1·25
Afghanistan . .	0·46	0·36	0·50	0·06	..	3·21	4.50	5·46
Australia . . .	..	..	..	0·01	0.08	0·42	0·66	0·16
Bahrein . . .	0·03	..	2·19	0·03	0·33	..	..	0·04
Belgium . . .	..	..	..	1·29	0·52	1·31	2·05	0·96
Bulgaria . . .	..	..	..	..	..	..	..	2·59
Burma . . .	0·96	0·19	0·09	..	0·31	0·17	0·17	0·26

Ceylon . . .	2·50	0·51	0·68	4·16	4.40	5·97	8·59	5·35
Czechoslovakia . .	..	..	..	..	..	..	..	0·41
East Germany . .	..	..	..	..	..	..	..	5·08
Egypt . . .	..	0·11	0·08	0·15	1·24	3·08	4·49	1·48
Ethiopia . . .	..	..	..	..	..	..	..	0·11
Ghana . . .	..	0·60	0.13	0·31	0·01	0·48	0·76	1·87
Hongkong . .	..	..	..	..	..	..	..	0·48
Iran	0·20	0·49	0·14	2·45	3·64	4·01	5·84	9·98
Iraq	0·09	0·45	0·36	1·43	1·18	0·60	0·88	1·30
Italy . . .	..	0·04	0·01	0·91	0·01	..	..	0·14
Japan . . .	..	..	..	..	..	..	..	3·18
Jordan . . .	..	..	..	..	..	..	..	0·14
Kenya . . .	0·32	0·41	0·66	1·59	3·11	3·37	4·99	4·36
Kuwait . . .	0·04	0·02	3·02	8·13	1·27	0·79	1·08	1·84
Lebanon . . .	..	0·04	1·17	0·20	0·12	0·03	0·04	..
Libya . . .	..	..	..	..	..	..	..	0·12
Malaysia . . .	0·02	..	0·01	5·49	5·55	5·48	8·34	2·22
Mauritius . . .	..	..	..	0·08	0·69	9·08	0·12	0·12
Muscat and Oman .	..	..	..	..	..	..	..	0·24

APPENDIX XX—(*Contd.*)

1	2	3	4	5	6	7	8	9
Nepal	..	..	0·01	..	4·94	0·06	0·09	..
New Zealand	..	..	..	..	0·62	0·25	0·34	0·20
Nigeria	0·03	0·25	0·03	0·97	4·34	5·61	7·66	1·11
Pakistan	0·03	6·31	0·97	0·15	0·06	..	..	..
Philippines	..	..	..	..	0·09	3·00	4·73	3·83
Qatar	..	..	..	..	..	..	..	0·10
S. Arabia	0·08	0·01	0·01	0·45	0·37	0·14	0·19	1·40
Singapore	..	..	..	..	..	..	..	8·92
S. Vietnam	..	..	..	1·85	3·24	3·83	5·53	..
Sudan	0·77	1·16	0·95	4·05	6·66	2·43	3·30	12·59
Switzerland	..	..	..	..	..	..	..	0·46
Syria	..	0·03	..	0·12	0·56	0·20	0·31	0·10
Tanzania	0·15	0·13	0·12	1·85	2·46	2·74	4·04	3·52
Thailand	..	..	0·02	0·05	0·72	2·05	3·10	3·33
T. Oman	..	..	..	..	..	..	..	0·15
Uganda	..	0·01	0·03	0·24	0·57	0·80	0·40	1·18

U. K. . . .	0·04	0·06	0·03	2·19	2·18	3·24	4·88	8·83
U. S. A. . . .	0·11	0·06	0·80	1·20	2·14	1·40	2·11	2·65
West Germany . .	0·01	0·13	0·03	0·12	4·05	3·25	5·12	6·53
Yugoslavia . .	..	..	..	2·30	8·52	6·01	8·56	8·74
Zambia . . .	..	..	0·06	0·20	0·28	0·37	0·58	0·04
Others . . .	0·32	0·50	1·17	2·25	2·06	1·14	1·63	0·45
TOTAL . .	6·22	12·10	16·80	46·55	68·13	65·67	96·02	112·77

APPENDIX—XXI

(*Vide* Paragraph 21.1.2)

List of automobile parts which are exported

1. Roof Lamp, Tail Lamp.
2. Crank Shaft Forgings.
3. Sealed Beams (Head Lights).
4. Pfl. Seals.
5. Brake Parts.
6. Brake Hoses with metallic & fittings.
7. Plungers Tape Lubricating Cans.
8. Taxi meters.
9. Horn Flasher Unit (Blinker Relays).
10. Clutch Plates. Clutches and Clutch components.
11. Hydraulic Jacks.
12. Hydraulic Brake Parts, Master cylinder Repair Kits.
13. Timing Gears.
14. Fly Wheel ring gears.
15. Cylinder Livers.
16. Camshaft bushings.
17. Clutch facings.
18. Clutch carbon or bearings.
19. Clutch spring.
20. Clutch Cover.
21. Universal Joint.
22. Propeller Shaft.
23. Wheels.
24. Oil Seals.
25. Front & Rear axles shaft.
26. Leaf Springs.
27. Spring brackets, hangers shackles.
28. Shock absorbers.
29. Hydraulic brake system.

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30. Vacuum Serve or Air Brake.
31. Suspension Coil Springs.
32. Spring Shackle Pins.
33. Spring bushes.
34. Tie Rods.
35. Tie Rod ends.
36. King Pins.
37. Brake drums.
38. Brake hubs.
39. Dynamious and dynamo armatures.
40. Starter Motors.
41. Wiring harness.
42. Ignitor Coil.
43. Sparking Plugs.
44. Distributor with vacuum control.
45. Voltage regulator.
46. Ignition Switches.
47. Direction indicator.
48. Flashes.
49. Stop lamp switches.
50. Horn, (electrical).
51. Horn Buttons.
52. Wind shield wipers.
53. Commulators for all types of vehicles (self starter).
54. Pistons.
55. Piston Pins.
56. Piston Rings.
57. Crank Shaft bearing all types.
58. Valve.
59. Valve spring.
60. Radiators.
61. Exhaust Muffler.
62. Fuel Lines.
63. Carburettor.
64. Fuel Pump.

65. Fuel Fitter.
66. Air Cleaner.
67. Cylinder Gasket—all types.
68. Connecting rods small and bushings.
69. Fuel Injection Pump.
70. Valve Guides.
71. Fuel Injectors.
72. Turning Chains.
73. Field Coils for all types of vehicles.
74. Dynamo armatures for various types of vehicles.
75. Fibre stampings for use in rewinding/reconditioning of self starter and Dynamo armatures.
76. Bush Bearings.
77. Contacts for solenoid switches.
78. Connectors for self starters.
79. Dimer Switches.
80. Door Lock for automobiles.
81. Hinges for automobiles.
82. Windows for buses and trucks.
83. Seats for buses and trucks.
84. Dashboard Instruments.
85. Flexible shafts for speedometers.
86. Door Handles for Automobiles.
87. Hubs Caps.

APPENDIX XXII

(Vide paragraph 21.5.1.)

A. Findings and Recommendations of the Sales-Cum-Study Team to South East Asian Countries.

"The Team found a fund of good will for India in most of the countries visited.

"Due possibility to the lack of adequate publicity, the import trade in most of the countries visited seemed to be unaware of India's industrial progress and was sceptical of our ability to deliver the goods.

"With the single exception of Thailand, the markets studied by the Team mostly require spare parts for British vehicles, both cars and trucks.

"Complaints were voiced by the import trade in some of the countries about the indifferent quality of supplies made by Indian exporters. By and large these exporters are shippers or jobbers and not manufacturers. Complaints were also heard about a lack of regard to business ethics and the Team came across a few cases where Indian exporters had quoted different prices to different parties for the same product. Instances of failure to meat delivery schedules were legion. Arrival of shipping documents long after the discharge of cargo at the port of destination leading to heavy demurrage is by no means a rare phenomenon.

"If non-payment and irregular payments of commission to agents in foreign markets is a source of irritation and grievance which is inimical to the establishment of healthy business relationship and the promotion of exports, non-conformity of supplies to samples will shake the confidence of the foreign buyer and what is worse an indifferent attitude to their complaints will almost certainly destroy further business prospects.

"Quite a number of vehicle assembly plants are coming up in Colombo, Singapore, Kuala Lumpur, Bangkok and there is enormous scope for starting joint ventures for the manufacture of parts. It is heartening to note that a few Indian industrialists have already evinced keen interest in such joint ventures.

Recommendations :

"There is considerable scope for the export of India-made automobile parts in the South East Asian countries visited by the Team.

The markets are sophisticated and highly competitive. Nontheless, given the necessary effort, it should be possible for India to build up a substantial export trade in motor vehicle spares. Strenuous efforts by the industry and substantial assistance from the Government will be necessary to achieve a break through and the following recommendations and suggestions are made for action both by the industry and the Government.

"The Indian Automobile Ancillary Industry should take up the manufacture of fast moving parts for such makes and models of vehicles as are popular in the countries of South East Asia. The combined business resulting from all the countries put together may warrant the cost of tooling etc.

"An export pool may be set up by a few important and big industrial units to undertake exports on behalf of the All India Automobile & Ancillary Industries Association members. This is in the long-term interest of the Indian auto industry. It is not economical for an importer to place indents with 10 or 20 different manufacturers. The export pool on the other hand, can have its offices located at one of the central places in South East Asia.

"It is advisable that till such time as an export pool is set up, the Indian Exporters should operate through recognised and established houses of Manufacturers's Representatives who have adequate business experience and contacts in the market.

"Market studies are important but they are no substitute for personal visits. An enduring export trade can be built by undertaking business visits abroad for developing intimate contacts between the buyer and the seller.

"The growing emphasis on quality control is a characteristic of modern industrial development; in export trade. This aspect is of paramount importance. The development of this concept has influenced modes of production as well as modes of merchandising. Both West Germany and the USA have a reputation for quality production, a requirement dictated as much by the highly sophisticated and discriminating domestic market as by the imperatives of foreign trade.

"Our Foreign officers should be kept well informed about the progress made by the Indian Automobile and Ancillary Industry and statistics relating to production, exports etc. should regularly be sent to them. This could well be done by the All India Automobile & Ancillary Industries Association and the Association of Indian Automobile Manufacturers.

"When they visit India periodically, our Commercial Counsellors should meet representative organisations of trade and industry.

"Indian exporters wishing to invite their prospective customers from abroad should be permitted to do so, based on their previous export performance in order to promote further exports.

"Heads of representative organisations of dealers/distributors/importers of automobile parts and large Road Transport Organisations in foreign countries should be invited to visit India periodically so that they can see for themselves the progress made by the country in the manufacture of sophisticated products.

"Apart from press publicity, publicity through Cinema Slides, Radio and Television should be organised highlighting the Indian automobile ancillary industry. Sales Promotional Aids to Dealers, such as display cards, novelties, wall boards, artistic wall calendars etc. should be provided extensively. Foreign exchange should be made available for the purpose more liberally.

"Our manufacturers should participate in Trade Exhibitions and Industrial Fairs in the neighbouring countries.

"Pricing policy is vital to export business. In evolving such a policy, the determining factors are clearly the costs of production and the economic advantages of export on the one hand, and the market situation in the importing country, freight costs, import duties etc., on the other. The export prices of our products should be at par with the International Prices—especially prices from Japan. Prices have to be competitive and quoted generally on c.i.f. basis. Government should give additional incentives and more liberal concessions in shipping and railway freights. Export Incentives announced after devaluation are not at all attractive to the manufacturers to sell at international prices and Government should revise the cash incentive for export of auto parts.

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"The packaging and cartoning of our products should be attractive and strong. The look of the package plays an important role in influencing the sales. It is also important to ensure the arrival of the products in a reasonably good condition. The export catalogues and price lists should be artistically printed to create an impression on the importers. The packing of wooden cases should also be strong enough.

"The delivery schedules should be strictly adhered to.

"With the exception of direct exports by the All India Automobile & Ancillary Industries Association members, all of whom are compulsory pre-shipment inspection should be strictly ced so as to ensure that only genuine parts conforming to red standards and specifications are exported.

"Personal visits by representatives of industrial firms should be ndertaken periodically, at least once a year, to their respective xport markets.

"Prompt attention should be paid to all enquiries and offers should be made only against those which could be fulfilled. The quotations should be complete with CIF/FOB prices in Std. currency, delivery/shipment, payment terms, etc.

"Automobile Trade Magazines and House magazines of leading industrial houses should be regularly sent to the leading importers abroad to acquaint them with the developments in India.

"The selection of the right type of men for the posts of our Commercial Attaches in the offices of Indian High Commissions or Indian Embassies is of great importance. These persons should have a reasonably good background and knowledge of Indian industry and trade.

"The current scales of foreign exchange allowance for business visits abroad are most inadequate and should be suitably enhanced. Additional foreign exchange should be made available to trade missions and delegations going abroad for entertainment expenses because it is quite normal for our delegations to be entertained in the host country and entertainments, if anything, are a two-way traffic.

The film "The Parts That Build The Auto" should be more widely shown on Television and along with regular feature films in neighbouring countries."

B. Conclusions and Recommendations of the Delegation to West Asia :

"The main purpose of the tour of the Delegation was to survey the prospects for export of Automobile Ancillary Components in the West Asian countries and determine the strategy to be adopted to achieve this objective. As a consequence of this tour and evaluation of the factors pertaining to each country, the Delegation would like to submit the following recommendations, so far as they relate to the Indian Automobile Ancillary Industry.

1. "India's exports require a new approach to export orientation in matching of quality and prices, credit and warranty terms, packaging and documentation to international standards. For any sustained export programme, a complete change in attitude of the Government, Industry and Trade is a pre-requisite. As a first step, while the individual manufacturer and the industry as a whole, must set for itself a target to export, it is equally imperative that the Government provides major raw material like aluminium at international prices, expedite remittance of agency commission, and be liber in providing foreign exchange to initiate sales promotion programr and build up exports.

2. "The full drawback of customs and excise duties or materials is to be allowed, without any ambiguity, f

programme to be successful. This particularly refers to some of the automobile components, for which the present drawback of 10% of f.o.b. value is less than 50% of the duty actually paid.

3. "If domestic demand for ancillary components does not increase or actually goes down due to a drop in demand for commercial vehicles, it will be in the interests of manufacturers to attempt more and more exports to ensure better utilisation of Plant & Equipment.

4. "Accurate statistical data is a pre-requisite for the planned development of the Industry. Statistical supplement issued by the All India Automobile & Ancillary Industries Association is well receied and attempts must be made to follow this up with the latest publication each year and mailed to Government Departments, Indian Trade Commissioners, Chambers of Commerce, Trade Associations and other interested parties in each country, to keep them up-to-date with the progress achieved by the Industry.

5. "Buyer's Guide is a MUST to give an opportunity for prospective buyers to have an idea of the major components available from the Indian Industry. The Ancillary Association must make arrangements to release this publication at the earliest possible date.

6. "It is desirable to hold automobile ancillary exhibitions at Tehran, Beirut, Cairo and Nairobi and also encourage the industry-wide participation at International Fairs in particular, in countries where there is a good export potential.

7. "The Association must invite Delegations from Egypt, Iran and Kenya where there are good prospects for Exports to inspire confidence in potential buyers as to the ability of the Industry to satisfactorily cater to their requirements.

8. "The Delegation is of the opinion that a Consortium of manufacturers must be formed at an Association level to make market surveys, initiate Sales Promotion Programme, release documentary films, invite delegations etc. Export Promotion Councils by themselves can never be effective to take care of the needs of the individual industry like automobile ancillaries without expanding their facilities in the foreign countries. It is, therefore, all the more necessary that the Industry takes the initiative in this respect.

9. "The Automobile Ancillary Industry must choose the countries on a selective basis where there are prospects for Exports. Any export promotional programme must have in its background a nucleus of brain power—Advertising Consultants, Sales Promotional personnel, Statistical and trend analysts and a long term strategy. Facilities must be provided by the Government for foreign exchange that is required for such programmes.

10. "India has to view exports, from a long term angle in pricing of products and even in profitability. While the Government must give adequate incentives to give a fill-up to the exports, the industry must in turn, set for itself a deadline, to improve its operating efficiency and stand on its own at the earliest possible date.

11. "Settlement of warranty claims documentation, prompt payment of agency commission etc. may look so trivial, but may mean so much in a competitive export market. Prospective exporters must take particular care in satisfying the customers in this respect.

12. "Visits abroad by Senior Executives is a must. All inhibitions of foreign travel and entertainment must go, more so in the highly competitive markets. The Government must provide facilities to recognised manufacturers by way of adequate foreign exchange in anticipation of a satisfactory industry-wide performance, as otherwise it will seriously hamper any sustained progress.

13. "It is essential that spurious manufacturers of motor vehicle parts who do not have the necessary equipment or test facilities but merchandise sub-standard products do not gain access to foreign markets. Compulsory pre-shipment inspection is a step in the right direction and must be implemented without any delay.

14. "Restrictions on exports, prices and Territories, under collaboration agreements will be detrimental to an effective drive for an improved export performance. Automobile Ancillary Manufacturers must take the initiative in negotiating with their Collaborators to get such restrictive clauses removed from their agreement and go all out in promoting exports of automobile ancillaries.

15. "Automobile ancillary manufacturers must recognise the importance of design and development and provide for adequate engineering staff with specialised training to tool up with the minimum time lag for any specification, design, or drawing to suit models in operation in countries with an export potential for India automobile ancillaries."

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